

Change-over panels.

Should the change-over panel be positioned within the generator room due note must be made of the floor/wall space that must be made available.

For change-over cubicles up to 1000Amp. rating the wall mounting panel of maximum depth 420mm. can be mounted directly above the cable trench in the side access area without causing too many problems.

For change-over cubicles from 1600Amp. and above, a floor standing panel is used which needs additional space to be allocated. Refer to Page D11 for dimensions.

The room dimensions need to be increased in the area of the cable duct/change-over panel to allow space and man access around cubicles with the following dimensions. A minimum of 800mm. for rear access should be allowed.

The cable trench in the area of the change-over cubicle needs to be increased in size to allow for the mains, load and generator cable access requirement.

Generator Sets.

All generators shown include 8 hour base fuel tanks. Free standing tanks can be provided but additional room space will be required.

Canvas ducting between the radiator and ductwork or attenuator should be a minimum of 300mm.

Air inlet should be at the rear of the alternator to allow adequate circulation.

Doors.

Doors should always open outwards. This not only makes for a better door seal when the set/s are running but allows for a quick exit/panic button or handle to get out. Make allowance for the generator to be moved into the room by using double doors at the attenuator space.

Generator installations WITHOUT acoustic treatment.

Note: Handy rule of thumb for INTAKE louvres. Use 1.5 x radiator area.

All the previous notes regarding "generator installations with acoustic treatment" equally apply to installations without acoustic attenuators with the exception of paragraph 3 relating to the Inlet and Outlet louvres.

Inlet and outlet louvres.

The inlet and outlet weather louvres should be installed within a wooden frame with a minimum 50% free area, good airflow profile and low restriction airflow access.

The weather louvres should have bird/vermin mesh screens fitted on the inside, but must not impede the free flow of cooling and aspiration air.

The outlet weather louver should be connected to the radiator ducting flange with a heat and oil resistant flexible connection.

When a radiator is mounted on the end of the plant main frame, position the set so that the radiator is as close to the outlet vent as possible, otherwise recirculation of hot air can take place. The recommended maximum distance away from the outlet vent is 150mm without air ducting.

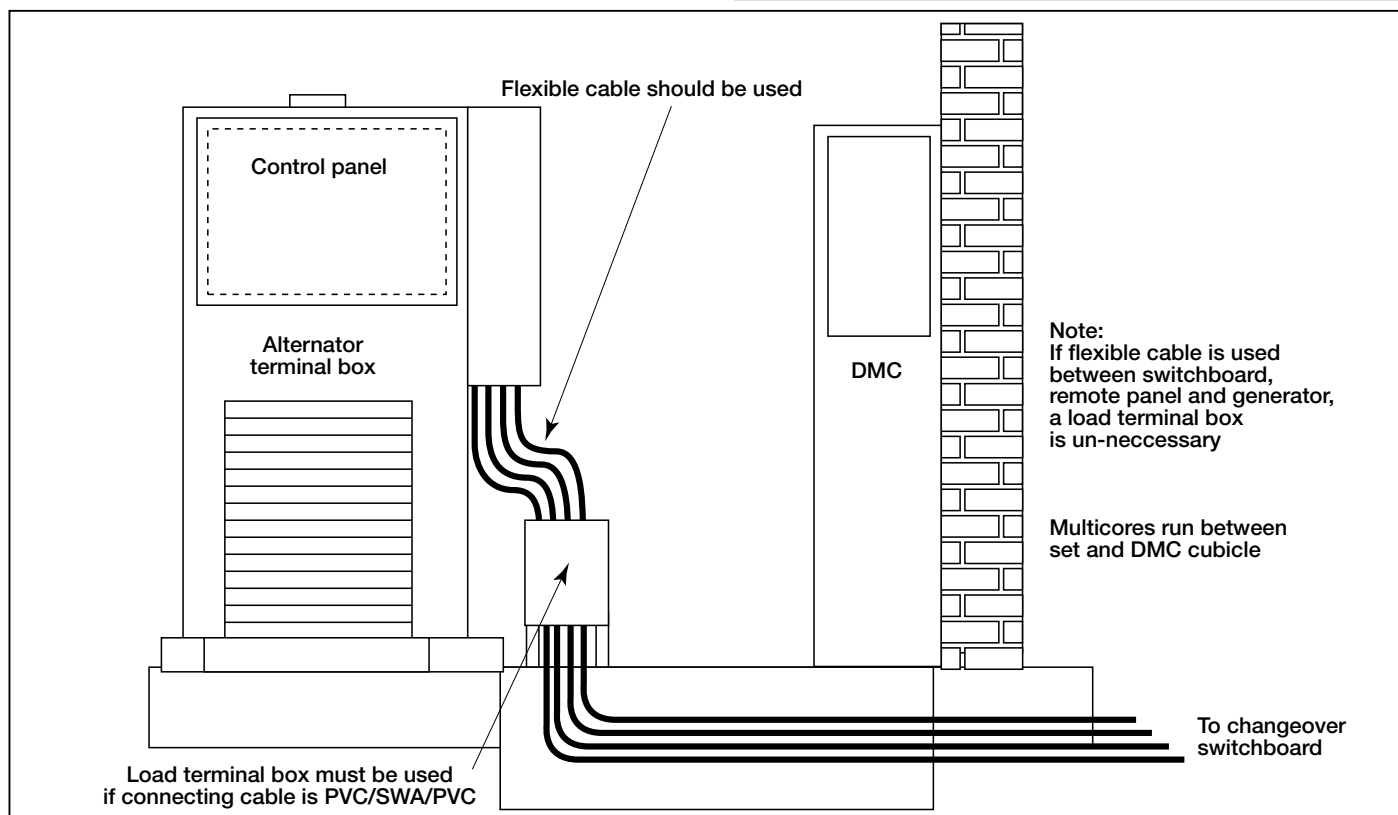


Fig. B1 Cable Connections

RECOMMENDED ROOM SIZES

Section B/60

CUMMINS ENGINE POWERED 40 kVA - 626 kVA – 60 Hz GENERATING SETS **WITHOUT** ACOUSTIC TREATMENT. SINGLE SETS.

Standby Rating kVA	Prime Rating kVA	Type of ENGINE	2000 Model	1999 Model	Room dimensions			Set back D	Set C/L position P	Exhaust		Outlet Louvre		Uplift H	Inlet Louvre		Cable trench position		
					Length A	width B	height C			Offset E	Height X	F	G		J	K	L	M	N
43	40	B3.3G1	35 DGGC	CS40-6	3100	3000	2600	400	1500	159	2300	725	750	650	800	900	420	400	1165
63	57	B3.3G2	52 DGHC	CS60-6	3100	3000	2600	400	1500	275	2300	850	850	650	800	900	420	400	1165
50	44	4B3.9G	40 DGBC	CS50-6	3100	3000	2600	400	1500	141	2300	725	800	600	750	1000	520	400	1325
64	60	4BT3.9G1	51 DGCA	CS60-6	3200	3000	2600	400	1500	194	2300	725	800	600	750	1000	520	400	1325
81	73	4BT3.9G2	65 DGCB	CS80-6	3200	3000	2600	400	1500	194	2300	725	800	600	750	1000	520	400	1325
89	83	4BTA3.9G1	72 DGCC	CS90-6	3250	3000	2600	400	1500	194	2300	725	800	600	750	1000	520	400	1410
106	95	6BT5.9G1	85 DGDA	CS100-6	3500	3000	2600	400	1500	168	2300	800	900	540	775	1000	520	400	1630
131	119	6BT5.9G2	105 DGDF	CS125-6	3500	3000	2600	400	1500	168	2300	800	900	540	775	1000	520	400	1630
167	153	6CT8.3G2	133 DGEA	CS170-6	3850	3000	2700	400	1500	255	2300	950	1100	600	1000	1400	520	400	1910
228	210	6CTA8.3G	182 DGFB	CS200-6	3850	3000	2700	400	1500	255	2300	950	1100	600	1000	1400	520	400	1910
250	254	LTA10G2	200 DFAB	CS250-6	4850	3250	2800	500	1625	361	2300	1100	1200	520	1250	1400	625	400	2285
315	286	LTA10G3	252 DFAC	CS300-6	4850	3250	2800	500	1625	361	2300	1100	1200	520	1250	1400	625	400	2285
390	351	NTA855G2	312 DFGB	CS400-6	4850	3200	2700	500	1600	284	2300	1150	1350	600	1400	1500	625	400	2525
437	402	NTA855G3	350 DFCC	CS450-6	4850	3200	2700	500	1600	284	2300	1150	1350	600	1400	1500	625	400	2630
500	439	KTA19G2	400 DFEB	CS500-6	5275	3400	3000	500	1700	320	2500	1525	1600	600	1600	2000	775	400	2815
562	504	KTA19G3	450 DFEC	CS550-6	5275	3400	3000	500	1700	320	2500	1525	1600	600	1600	2000	775	400	2815
626	561	KTA19G4	501 DFED	CS625-6	5275	3400	3000	500	1700	320	2500	1525	1600	600	1600	2000	775	400	2815

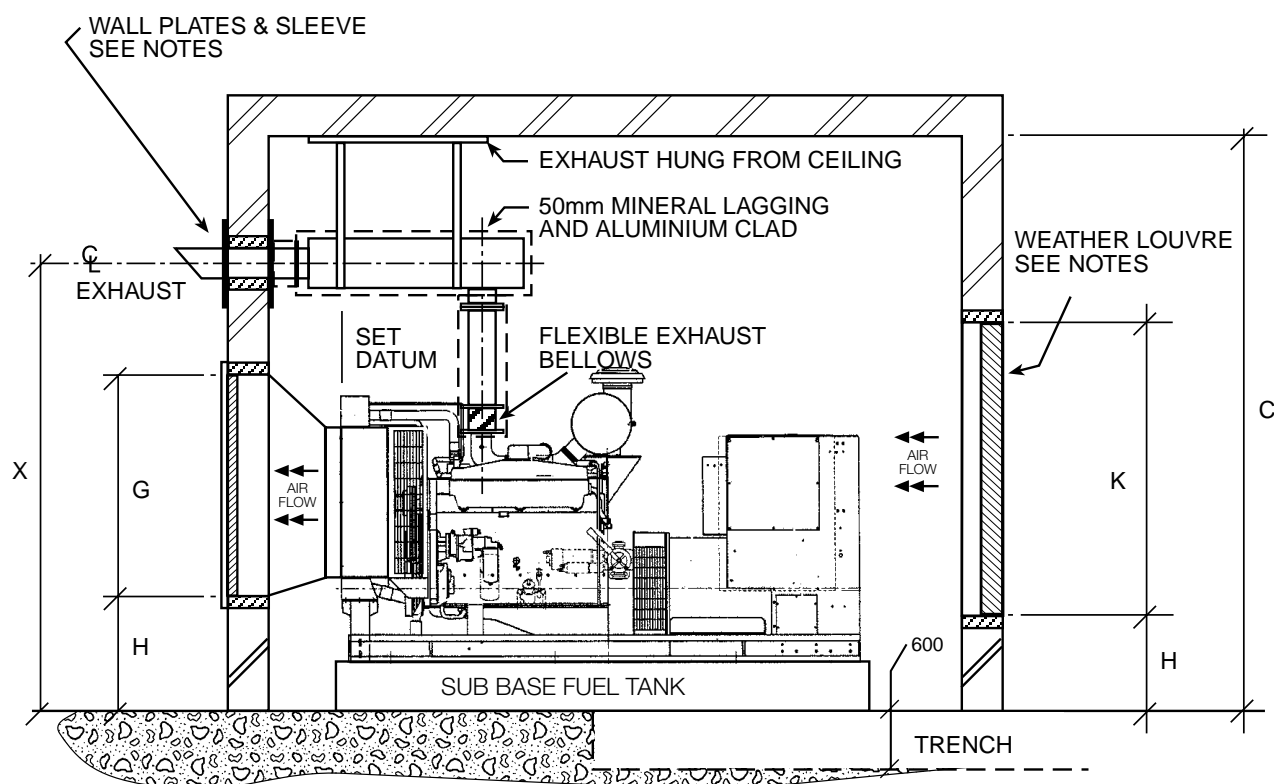
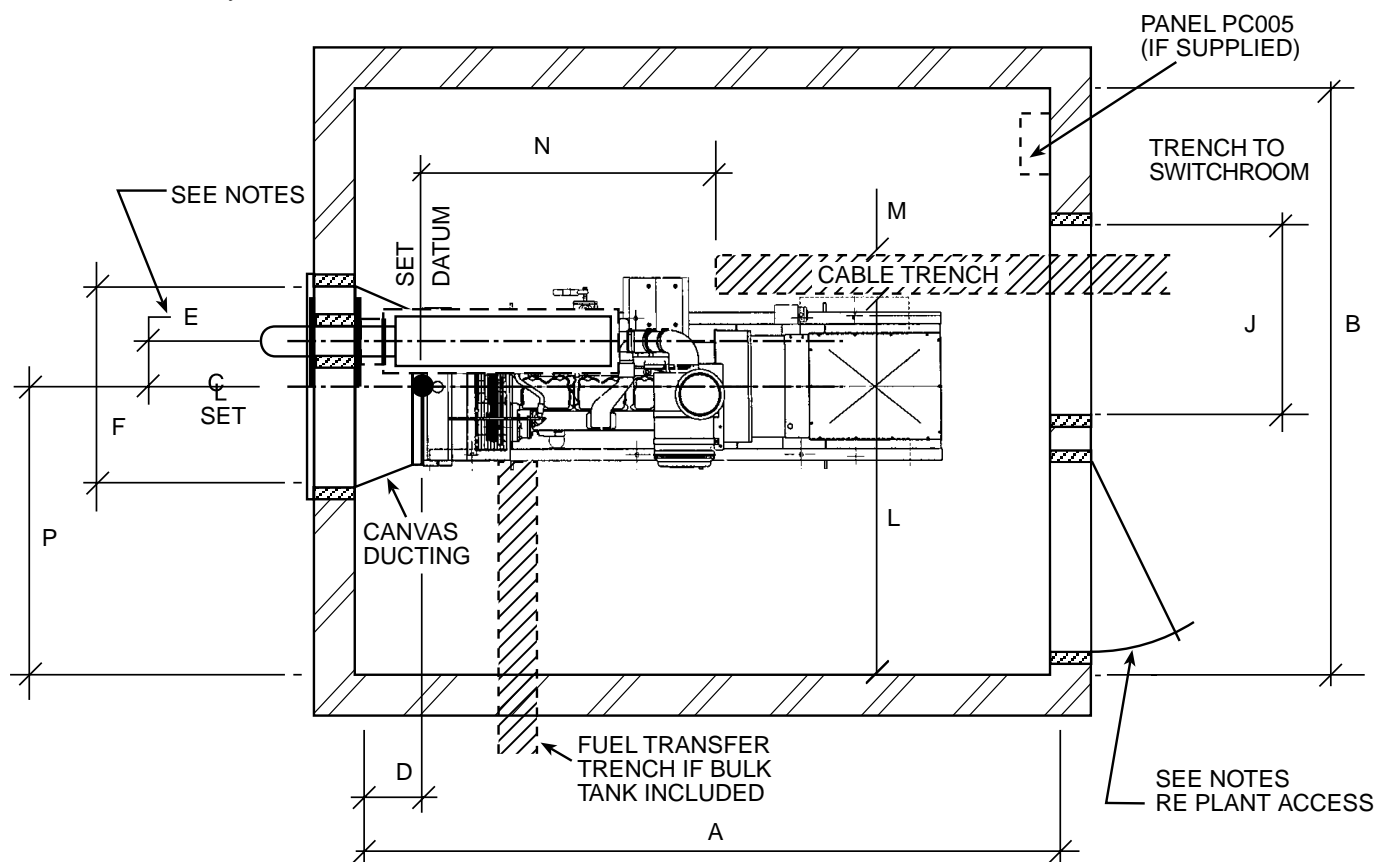
Before finalising the generator room layout please ensure you read the guidance notes.

RECOMMENDED ROOM SIZES

Section B/60

Cummins Generating Sets 40 kVA - 626 kVA – 60 Hz

Generator 100m layout without Acoustic Treatment



RECOMMENDED ROOM SIZES

Section B/60

CUMMINS ENGINE POWERED 40 kVA – 626 kVA – 60 Hz GENERATING SETS WITH ACOUSTIC TREATMENT. SINGLE SETS.

Standby Rating kVa	Prime Rating kVA	Type of ENGINE	2000 Model	1999 Model	length A	width B	height C	Set back D	Set C/L position P	Exhaust offset E	Exhaust height X	Attenuator Dimensions			uplift H	Cable trench position.		
												F	Y	G		L	M	N
43	40	B3.3G1	35 DGGC	CS40-6	5500	3000	2700	400	1500	159	2300	900	1200	1300	400	420	400	1165
63	57	B3.3G2	52 DGHC	CS60-6	5500	3000	2700	400	1500	275	2300	900	1200	1300	400	420	400	1165
50	44	4B3.9G	40 DGBC	CS50-6	5520	3000	2700	400	1500	168	2300	900	1200	1300	400	520	400	1325
64	60	4BT3.9G1	51 DGCA	CS60-6	5600	3000	2700	400	1500	221	2300	900	1200	1300	400	520	400	1325
81	73	4BT3.9G2	65 DGCB	CS80-6	5600	3000	2700	400	1500	221	2300	900	1200	1300	400	520	400	1325
89	83	4BTA3.9G1	72 DGCC	CS90-6	5600	3000	2700	400	1500	221	2300	900	1200	1300	400	520	400	1410
106	95	6BT5.9G2	85 DGDA	CS100-6	6200	3000	2700	400	1500	208	2300	900	1500	1300	400	520	400	1630
131	119	6BT5.9G2	105 DGDF	CS125-6	6200	3000	2700	400	1500	208	2300	900	1500	1300	400	520	400	1630
167	153	6CT8.3G2	133 DGEA	CS170-6	6900	3000	2800	400	1500	320	2300	1200	1500	1200	400	520	400	1910
228	210	6CTA8.3G	182 DGFB	CS200-6	6900	3000	2800	400	1500	320	2300	1200	1500	1200	400	520	400	1910
250	254	LTA10G2	200 DFAB	CS250-6	7700	3250	2900	500	1625	426	2400	1200	1500	1550	300	625	400	2285
315	286	LTA10G3	252 DFAC	CS300-6	7700	3250	2900	500	1625	426	2400	1200	1500	1550	300	625	400	2285
390	351	NTA855G2	312 DFGB	CS400-6	7840	3200	3000	500	1600	362	2500	1500	1500	1650	400	625	400	2525
437	402	NTA855G3	350 DFCC	CS450-6	7960	3200	3200	500	1600	362	2700	1800	1500	1950	400	625	400	2630
500	439	KTA19G2	400 DFEB	CS500-6	8375	3400	3250	500	1700	420	2750	1800	1500	2000	400	775	400	2815
562	504	KTA19G3	450 DFEC	CS550-6	8375	3400	3250	500	1700	420	2750	1800	1500	2000	400	775	400	2815
626	561	KTA19G4	510 DFED	CS625-6	8375	3400	3250	500	1700	420	2750	1800	1500	2000	400	775	400	2815

Before finalising the generator room layout please ensure you read the guidance notes.

The attenuator dimensions indicated are based on 100mm. airways and 200mm acoustic modules.

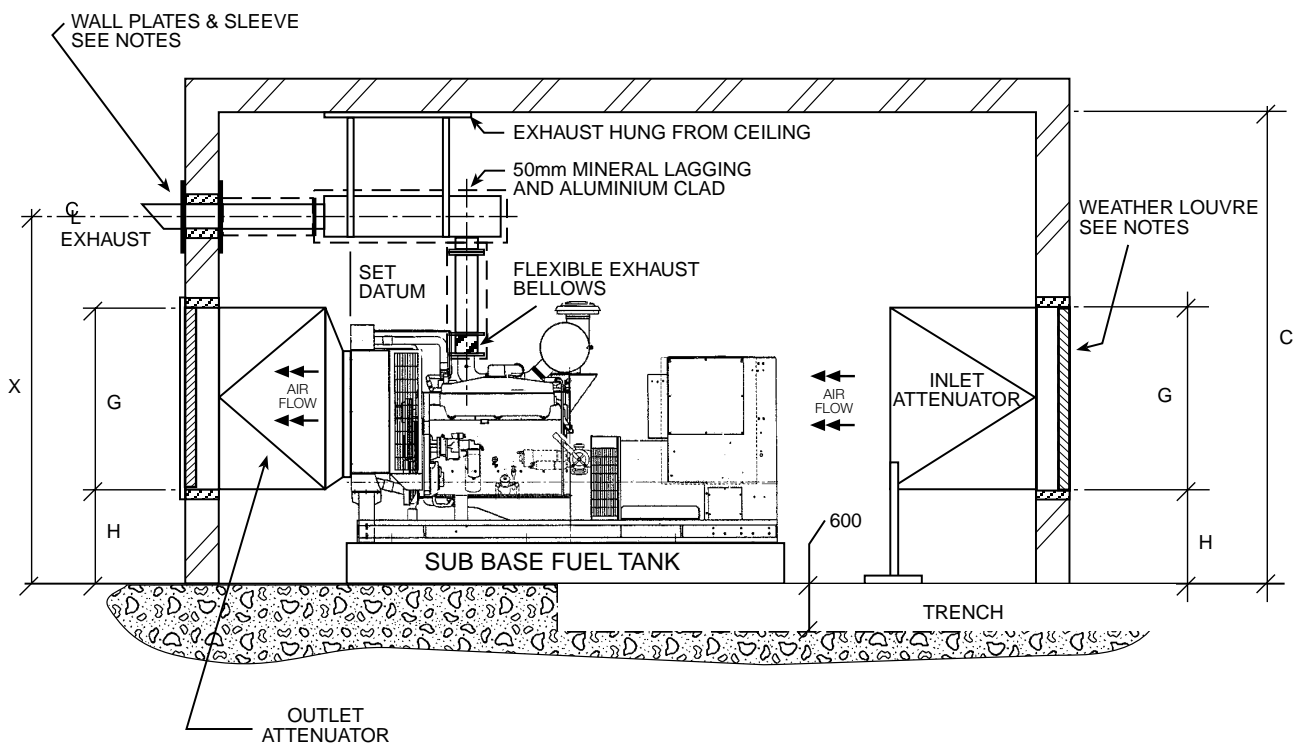
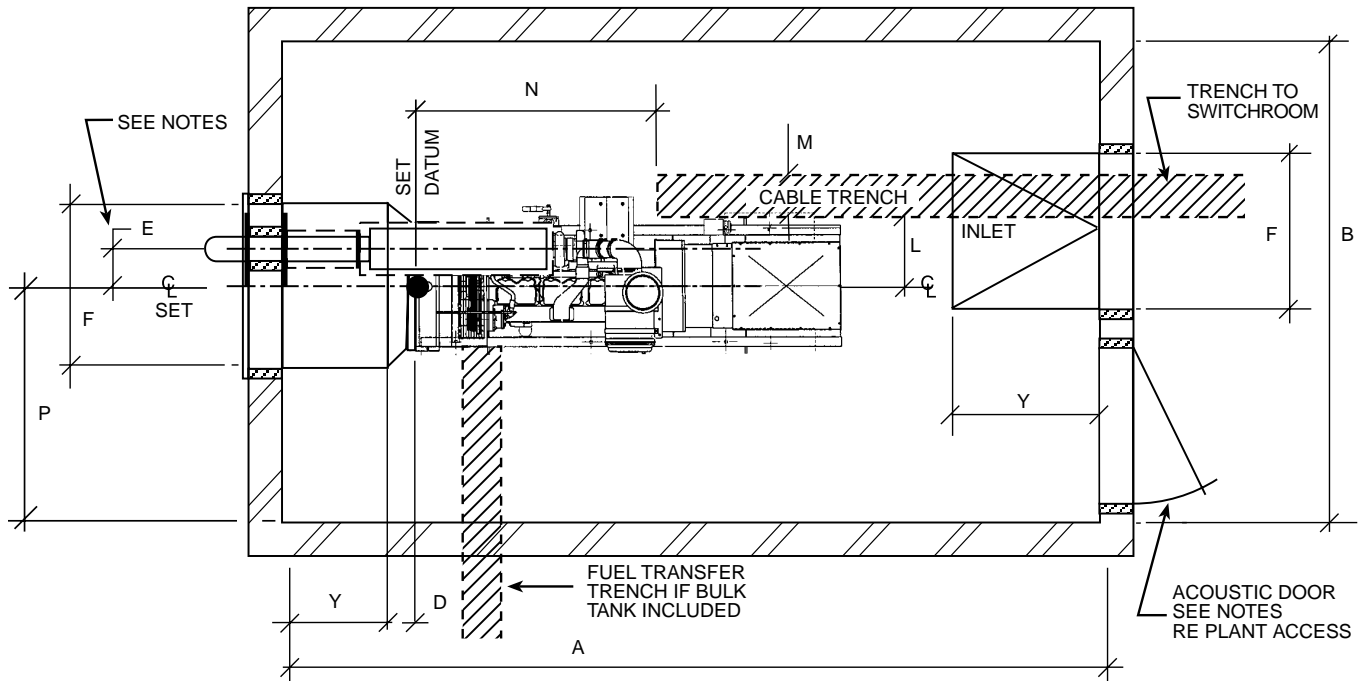
In free field conditions we would expect this treatment to achieve 85dBA at 1 metre.

RECOMMENDED ROOM SIZES

Section B/60

Cummins Generating Sets 40 kVA - 626 kVA – 60 Hz

Generator room layout with Acoustic Treatment to achieve 85dB(A) @ 1 metre



RECOMMENDED ROOM SIZES

Section B/60

CUMMINS ENGINE POWERED 681 kVA – 2500 kVA – 60 Hz GENERATING SETS **WITHOUT** ACOUSTIC TREATMENT. SINGLE SETS.

Standby Rating kVA	Prime Rating kVA	Type of ENGINE	2000 Model	1999 Model	Room dimensions			Set back D	Set C/L position P	Exhaust		Outlet Louvre		Uplift H	Inlet Louvre		Cable trench position		
					Length A	width B	height C			Offset E	Height X	F	G		J	K	L	M	N
754	681	VTA28G5	603 DFGB	CS750-6	5300	3450	3200	400	1725	300	2700	1625	2000	400	2000	2150	775	500	3150
950	862	QST30G1	760 DFHA	CS950-6	5960	3640	3400	500	1820	300	2950	1675	2000	400	2000	2200	920	500	3575
1012	920	QST30G2	810 DFHB	CS1000-6	5960	3640	3400	500	1820	300	2950	1675	2000	400	2000	2200	920	500	3575
1156	1044	QST30G3	925 DFHC	CS1100-6	5960	3640	3400	500	1820	300	2950	1675	2000	400	2000	2200	920	500	1665
1276	1160	KTA38G4	1020 DFJD	CS1250-6	6050	3800	3400	500	1900	350	3000	1950	2350	300	2500	2650	920	500	3655
1587	1400	KTA50G3	1270 DFLE	CS1600-6	6800	3800	3600	500	1900	350	3100	2300	2350	400	2600	2750	920	600	4375
1931	1608	KTA50G9	1545 DFLE	CS1900-6	7500	4000	3600	500	2000	350	3100	2300	2350	400	2600	2750	920	600	5000
2188	2000	QSK60G6	1600 DQKB	CS2200-6	7850	4500	4700	600	2250	693	4000	3150	3150	400	3500	3750	645	600	4800
2500	2250	QSK60G6	2000 DQKC	CS2500-6	7850	4500	4700	600	2250	693	4000	3150	3150	400	3500	3750	645	600	4800

Before finalising the generator room layout design please ensure you read the guidance notes.



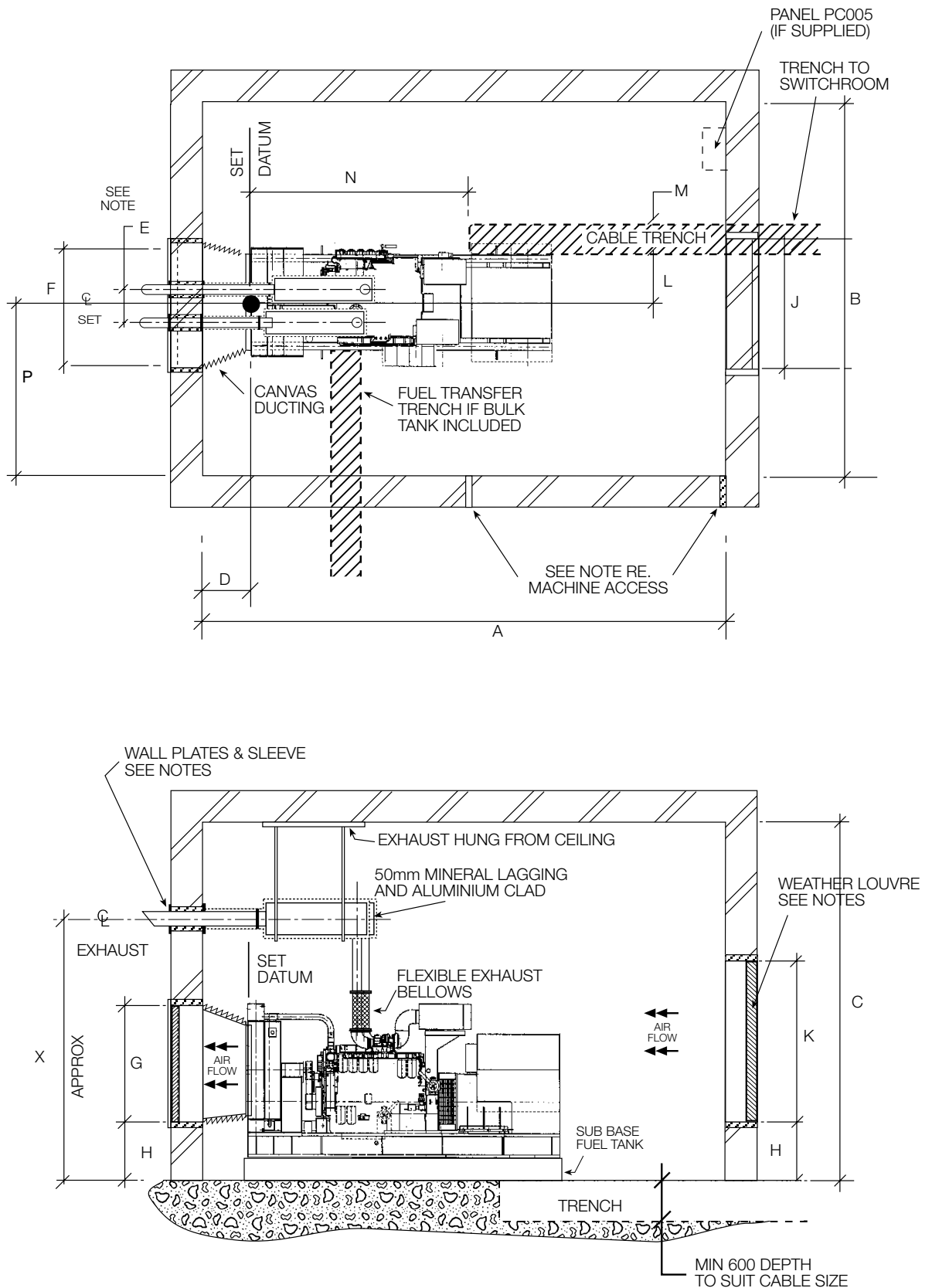
Model CS750-6 (754kVA) in a typical hot climate installation.

RECOMMENDED ROOM SIZES

Section B/60

Cummins Generating Sets 681 - 2500 kVA – 60 Hz

Generator room layout without Acoustic Treatment



RECOMMENDED ROOM SIZES

Section B/60

CUMMINS ENGINE POWERED 681 kVA – 2500 kVA – 60 Hz GENERATING SETS WITH ACOUSTIC TREATMENT. SINGLE SETS.

Standby Rating kVA	Prime Rating kVA	Type of ENGINE	2000 Model	1999 Model	Room dimensions			Set back D	Set C/L position P	Exhaust offset E	Exhaust height X	Attenuator Dimensions			uplift H	Cable trench position.		
					Length A	width B	height C					F	Y	G		L	M	N
754	681	VTA28G5	603 DFGB	CS750-6	9000	3450	3450	400	1725	400	2950	1800	1800	2150	300	775	500	5150
950	862	QST30G1	760 DFHA	CS950-6	9000	3640	4000	500	1820	400	3450	2700	1500	2750	300	920	500	5100
1012	920	QST30G2	810 DFHB	CS1000-6	9000	3640	4000	500	1820	400	3450	2700	1500	2750	300	920	500	5100
1156	1044	QST30G3	925 DFHC	CS1100-6	9000	3640	4000	500	1820	400	3450	2700	1500	2750	300	920	500	5100
1276	1160	KTA38G4	1020 DFJD	CS1250-6	10300	3800	4000	500	1900	450	3200	2100	2200	2650	200	920	600	3655
1587	1400	KTA50G3	1270 DFLE	CS1600-6	11160	3800	4000	500	1900	450	3100	2100	2200	2650	200	920	600	4375
1931	1608	KTA50G9	1545 DFLE	CS1900-6	12700	4000	4500	500	2000	500	3800	2700	2600	3050	200	920	600	5000
2188	2000	QSK60G6	1600 DQKB	CS2200-6	13650	4500	4500	600	2250	693	3800	3000	3000	3150	325	645	600	4800
2500	2250	QSK60G6	2000 DQKC	CS2500-6	13650	4500	4500	600	2250	693	3800	3000	3000	3150	325	645	600	4800

Before finalising the generator room layout design please ensure you read the guidance notes.

The attenuator dimensions indicated are based on 100mm airways and 200mm acoustic modules.

In free field conditions we would expect this treatment to achieve 85dBA at 1 metre.



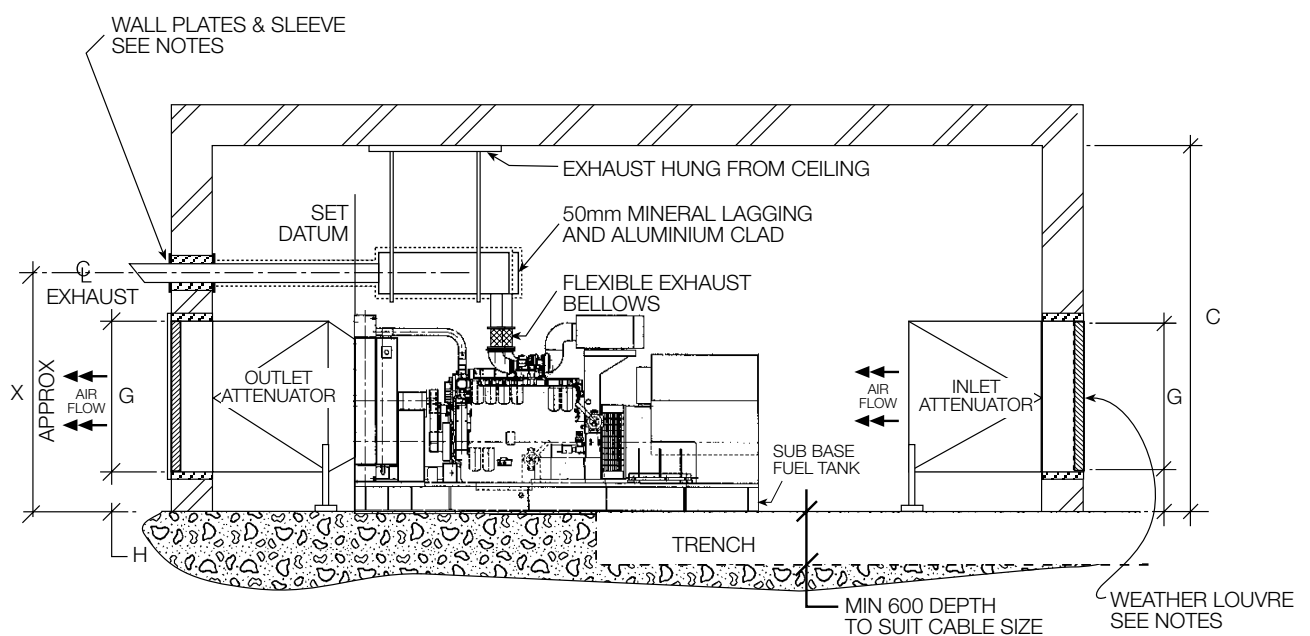
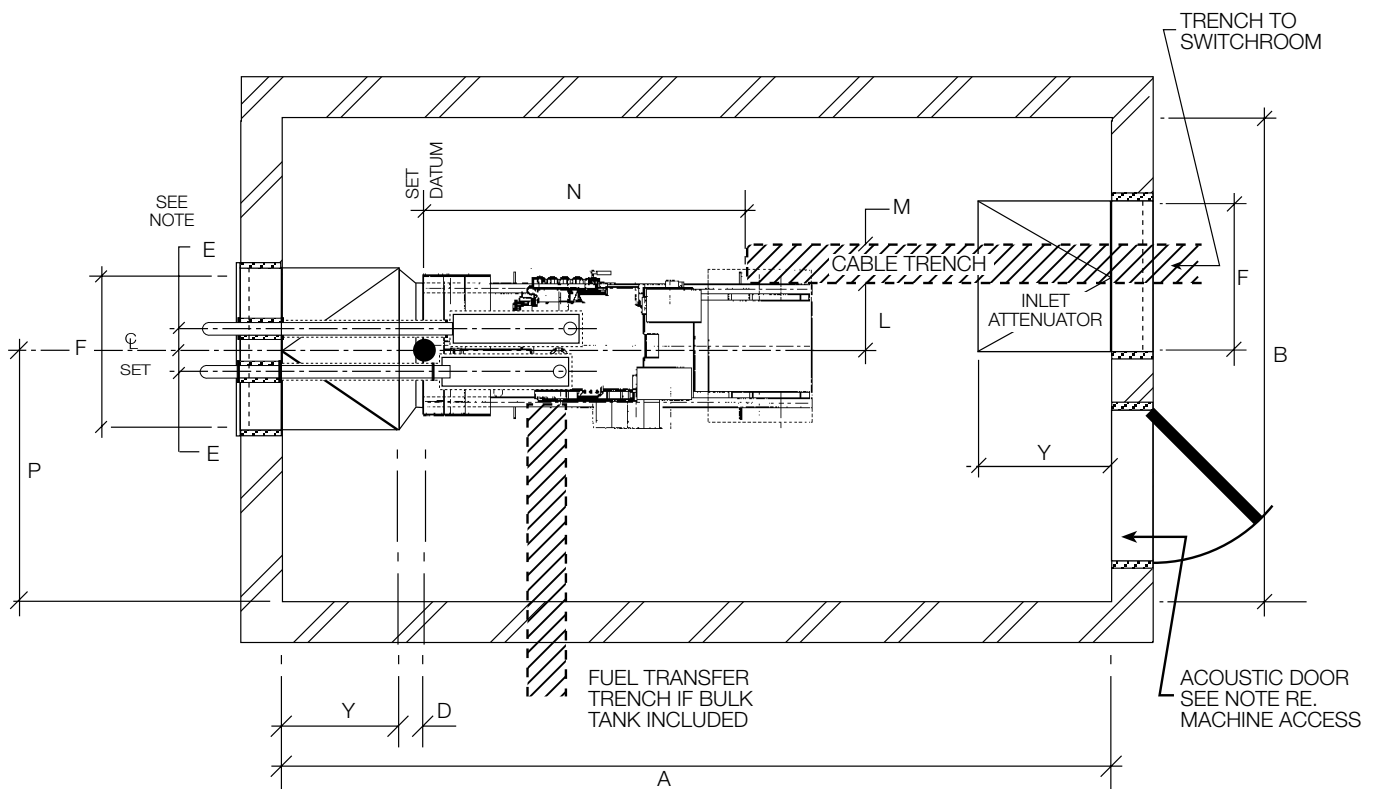
Good example of purpose made building to house two 1000 kVA generators with sound attenuators extending to the outside.

RECOMMENDED ROOM SIZES

Section B/60

Cummins Generator Sets 681 - 2500 kVA – 60 Hz

Generator room layout with Acoustic Treatment to Achieve 85dBA @ 1 metre



RECOMMENDED ROOM SIZES

Section B/60

ROOM WITH **TWO** GENERATORS INSTALLED.

CUMMINS ENGINE POWERED 254 kVA - 561 kVA – 60 Hz GENERATING SETS **WITHOUT** ACOUSTIC TREATMENT.

Standby Rating kVA	Prime Rating kVA	Type of ENGINE	2000 Model	1999 Model	Room dimensions			Positions			Exhaust		OUTLET LOUVRE		uplift H	INLET LOUVRE		Cable trench position.		
					length A	width B	height C	apart Z	back D	set C/L P	Offset E	Height X	F	G		J	K	L	M	N
250	254	LTA10G2	200 DFAB	CS250-6	4850	6300	2800	2250	500	2425	361	2300	1100	1200	520	1250	1400	625	400	2285
315	286	LTA10G3	252 DFAC	CS300-6	4850	6300	2800	2250	500	2425	361	2300	1100	1200	520	1250	1400	625	400	2285
390	351	NTA855G2	312 DFGB	CS400-6	4850	6200	2700	2200	500	2425	284	2300	1150	1350	600	1400	1500	625	400	2525
437	402	NTA855G3	350 DFCC	CS450-6	4850	6200	2700	2200	500	2425	284	2300	1150	1350	600	1400	1500	625	400	2630
500	439	KTA19G2	400 DFEB	CS500-6	5275	6600	3000	2400	400	2500	320	2500	1525	1600	600	1600	2000	775	400	2815
562	504	KTA19G3	450 DFEC	CS550-6	5275	6600	3000	2400	400	2500	320	2500	1525	1600	600	1600	2000	775	400	2815
626	561	KTA19G4	501 DFED	CS625-6	5275	6600	3000	2400	400	2500	320	2500	1525	1600	600	1600	2000	775	400	2815

Before finalising the generator room layout please ensure you read the guidance notes.



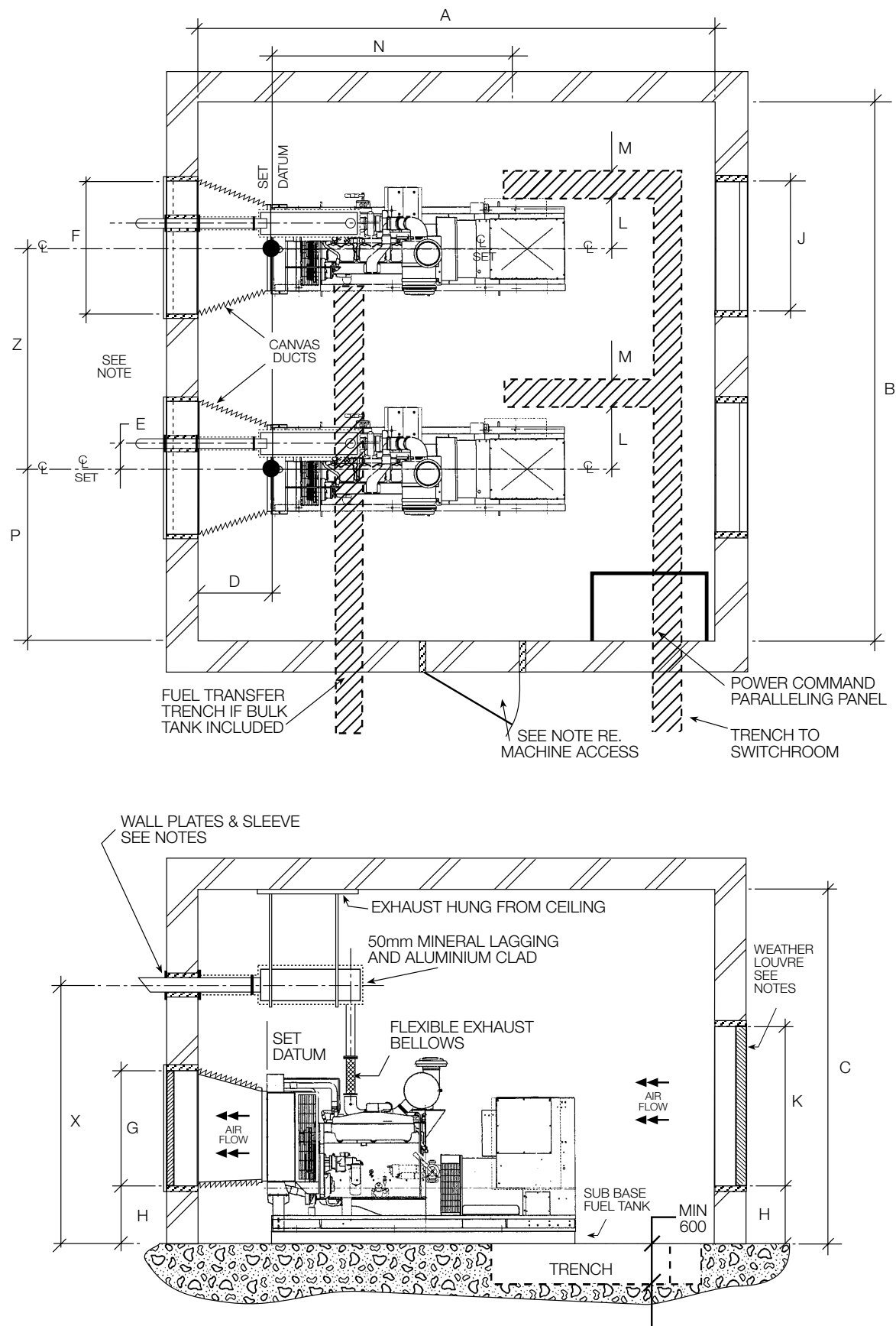
Twin CS1100-6 sets (1044kVA) with QST30 G3 engines, PCC control and DMC autosync cubicle in a typical installation.

RECOMMENDED ROOM SIZES

Section B/60

Cummins Generating Sets 254 - 626 kVA – 60 Hz

2 Set installation without Acoustic Treatment



RECOMMENDED ROOM SIZES

Section B/60

ROOM WITH **TWO** GENERATORS INSTALLED.

CUMMINS ENGINE POWERED 254 kVA – 626 kVA – 60 Hz GENERATING SETS **WITH ACOUSTIC TREATMENT.**

Standby Rating kVA	Prime Rating kVA	Type of ENGINE	2000 Model	1999 Model	Room dimensions			Positions			Exhaust		Attenuator Dimensions			uplift H	Cable trench position.		
					length A	width B	height C	Apart Z	back D	set C/L P	Offset E	Height X	F	Y	G		L	M	N
250	254	LTA10G2	200 DFAB	CS250-6	7700	6300	2900	2250	500	2425	426	2400	1200	1500	1550	300	625	400	2285
315	286	LTA10G3	252 DFAC	CS300-6	7700	6300	2900	2250	500	2425	426	2400	1200	1500	1550	300	625	400	2285
390	351	NTA855G2	312 DFCE	CS400-6	7840	6200	3000	2200	500	2425	362	2500	1500	1500	1650	400	625	400	2525
437	402	NTA855G3	350 DFCC	CS450-6	7960	6200	3200	2200	500	2425	362	2700	1800	1500	1950	400	625	400	2630
500	439	KTA19G2	400 DFEB	CS500-6	8375	6600	3250	2400	400	2500	420	2750	1800	1500	2000	400	775	400	2815
562	504	KTA19G3	450 DFEC	CS550-6	8375	6600	3250	2400	400	2500	420	2750	1800	1500	2000	400	775	400	2815
626	561	KTA19G4	501 DFED	CS625-6	8375	6600	3250	2400	400	2500	420	2750	1800	1500	2000	400	775	400	2815

Before finalising the generator room layout please ensure you read the guidance notes.

The attenuator dimensions indicated are based on 100mm. airways and 200mm acoustic modules.

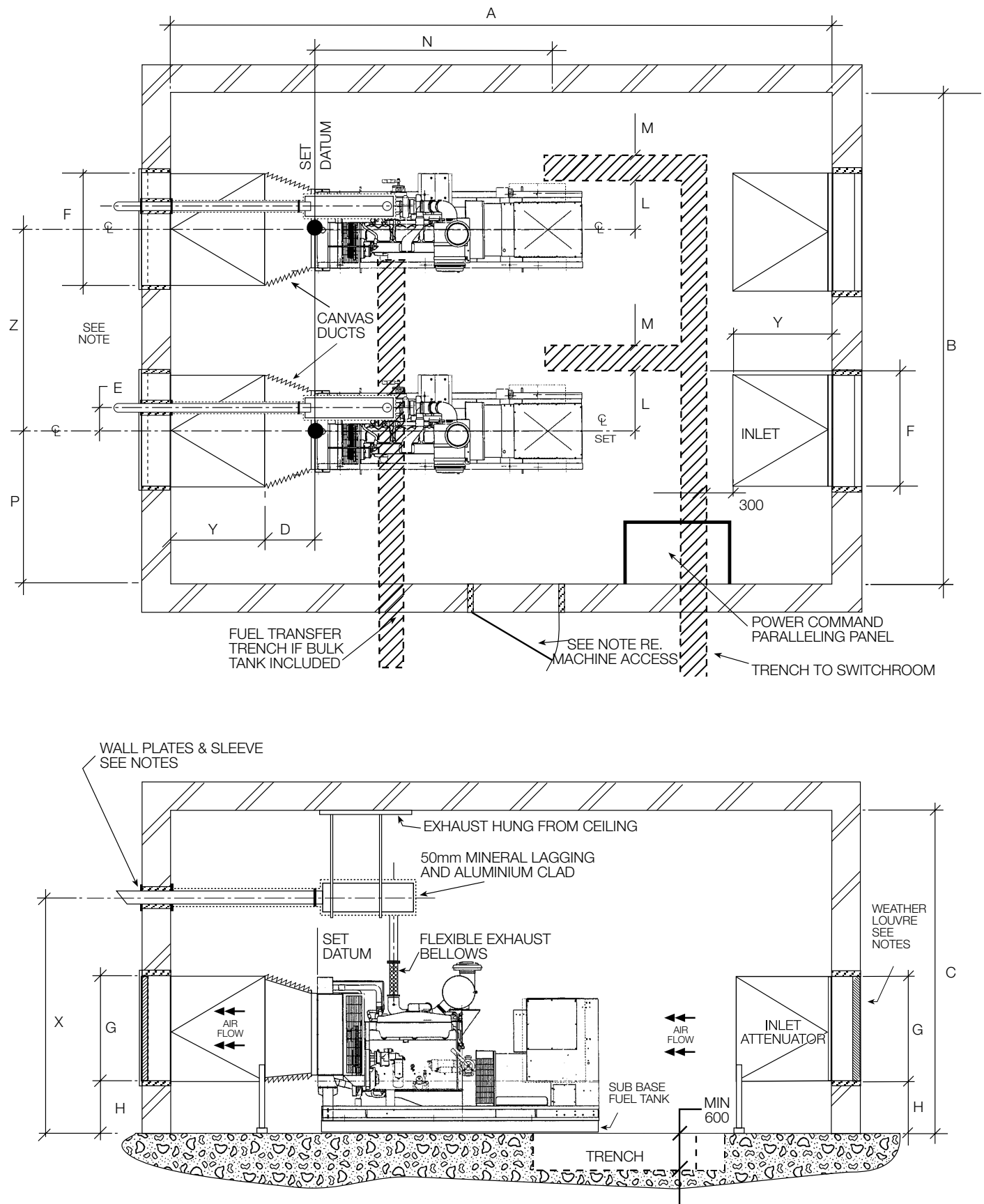
In free field conditions we would expect this treatment to achieve 85dBA at 1 metre.

RECOMMENDED ROOM SIZES

Section B/60

Cummins Generating Sets 254 - 626 kVA – 60 Hz

Room layout for 2 Set installation with Acoustic Treatment to Achieve 85dBA @ 1 metre



RECOMMENDED ROOM SIZES

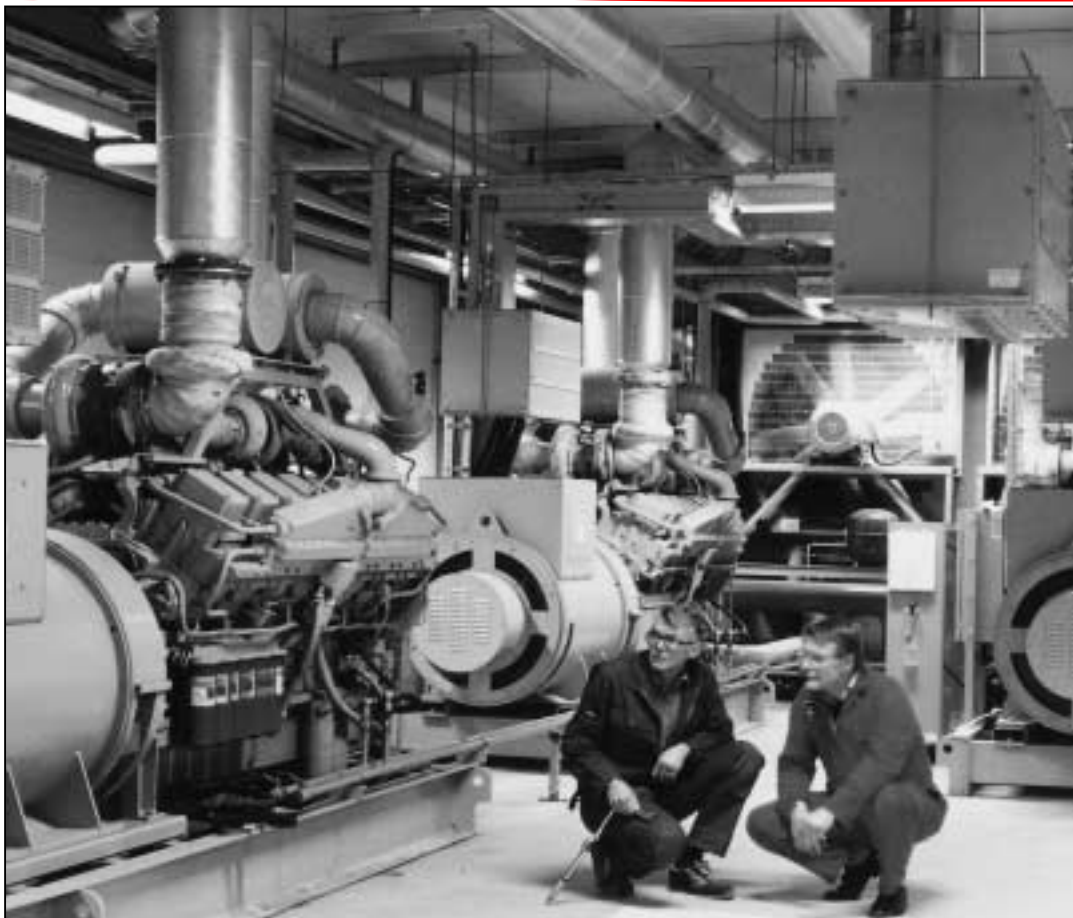
Section B/60

ROOM WITH **TWO** GENERATORS INSTALLED.

CUMMINS ENGINE POWERED 681 kVA - 2500 kVA – 60 Hz GENERATING SETS **WITHOUT** ACOUSTIC TREATMENT.

Standby Rating kVA	Prime Rating kVA	Type of ENGINE	2000 Model	1999 Model	Room dimensions			Positions			Exhaust		OUTLET LOUVRE		uplift H	INLET LOUVRE		Cable trench position.		
					length A	width B	height C	apart Z	back D	set C/L P	Offset E	Height X	F	G		J	K	L	M	N
754	681	VTA28G5	603 DFGB	CS750-6	5300	6700	3200	2450	400	2575	300	2700	1625	2000	600	2000	2150	775	500	3500
950	862	QST30G1	760 DFHA	CS900-6	5960	7080	3400	2640	500	2620	300	2950	1675	2000	600	2000	2200	920	500	3900
1012	920	QST30G2	810 DFHB	CS1000-6	5960	7080	3400	2640	500	2620	300	2950	1675	2000	600	2000	2200	920	500	3900
1156	1044	QST30G3	925 DFHC	CS1100-6	5960	7080	3400	2640	500	2620	300	2950	1675	2000	600	2000	2200	920	500	3900
1276	1160	KTA38G4	1020 DFJD	CS1250-6	6050	7400	3500	2800	500	2700	350	3000	1950	2350	600	2500	2650	920	500	3655
1587	1400	KTA50G3	1270 DFLE	CS1600-6	6800	7400	3600	2800	500	2700	350	3100	2300	2350	600	2600	2750	920	600	5000
1931	1608	KTA50G9	1545 DFLE	CS1900-6	7500	7800	3600	3000	600	2800	350	3100	2300	2350	600	2660	2750	920	600	5700
2188	2000	QSK60G6	1600 DQKB	CS2200-6	7850	8800	4700	3500	600	3050	693	4000	3150	3150	525	3500	3750	645	600	4800
2500	2250	QSK60G6	2000 DQKC	CS2500-6	7850	8800	4700	3500	600	3050	693	4000	3150	3150	525	3500	3750	645	600	4800

Before finalising the generator room layout design please ensure you read the guidance notes.



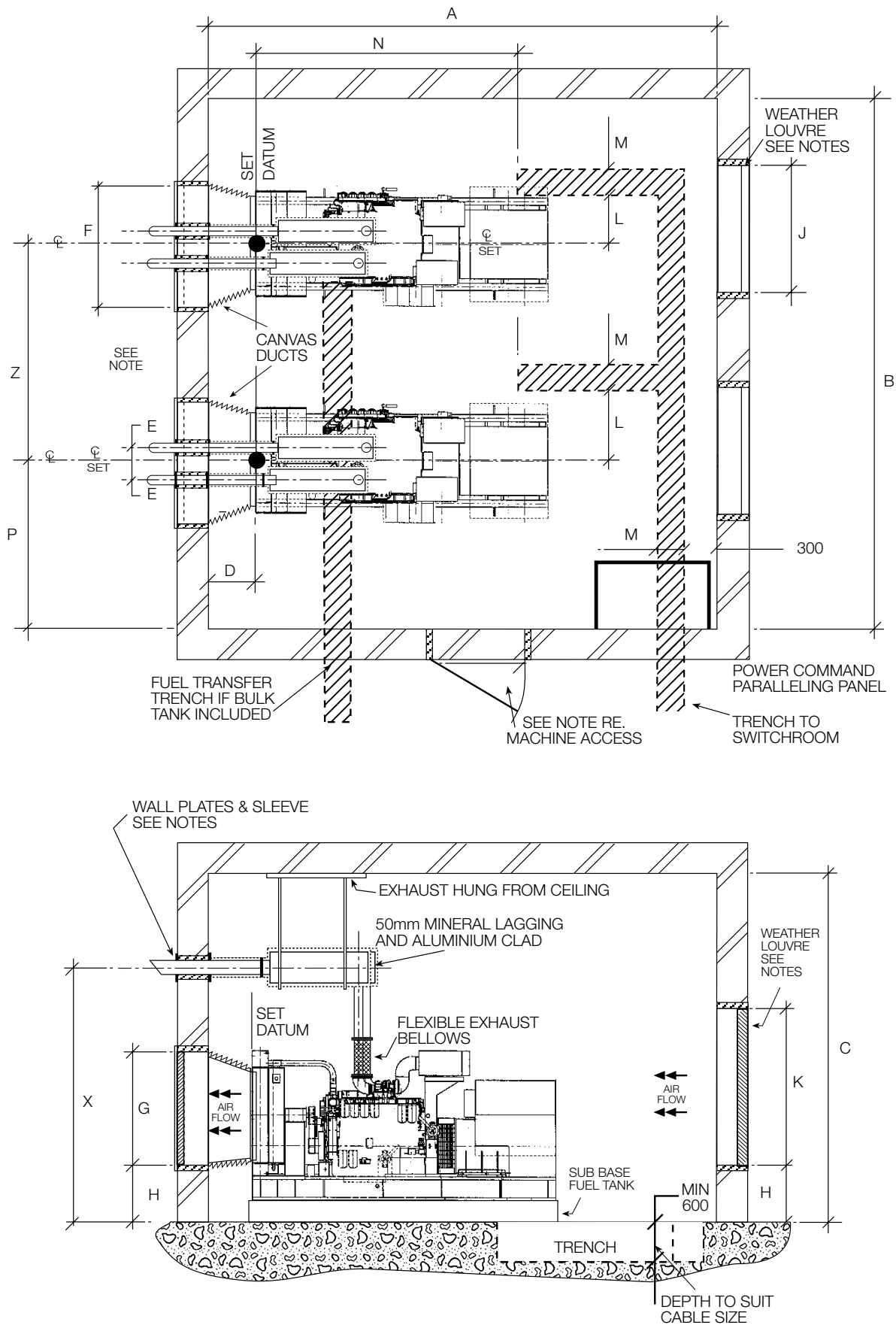
Three 1587 kVA standby sets with Cummins KTA50G engines provide backup to 150 computer centres in Norway.

RECOMMENDED ROOM SIZES

Section B/60

Cummins Generating Sets 681 - 2500 kVA – 60 Hz

Room layout for 2 Set installation without Acoustic Treatment



RECOMMENDED ROOM SIZES

Section B/60

ROOM WITH **TWO** GENERATORS INSTALLED.

CUMMINS ENGINE POWERED 681 kVA – 2500 kVA – 60 Hz GENERATING SETS **WITH ACOUSTIC TREATMENT.**

Standby Rating kVA	Prime Rating kVA	Type of ENGINE	2000 Model	1999 Model	Room dimensions			Positions			Exhaust		Attenuator Dimensions			uplift H	Cable trench position.		
					length A	width B	height C	Apart Z	back D	set C/L P	Offset E	Height X	F	Y	G		L	M	N
754	681	VTA28G5	603 DFGB	CS750-6	9000	6700	3450	2450	400	2575	400	2950	1800	1800	2150	400	775	500	3500
950	862	QST30G1	760 DFHA	CS900-6	9000	7300	4000	2850	500	2620	400	3450	2700	1500	2750	400	920	500	3900
1012	920	QST30G2	810 DFHB	CS1000-6	9000	7300	4000	2850	500	2620	400	3450	2700	1500	2750	400	920	500	3900
1156	1044	QST30G3	925 DFHC	CS1100-6	9000	7300	4000	2850	500	2620	400	3450	2700	1500	2750	400	920	500	3900
1276	1160	KTA38G4	1020 DFJD	CS1250-6	10200	7400	4000	2800	500	2700	500	3200	2100	2200	2650	200	920	600	3655
1587	1400	KTA50G3	1270 DFLE	CS1600-6	11160	7400	4000	2800	500	2700	450	3100	2100	2200	2650	200	920	600	5000
1931	1608	KTA50G9	1545 DFLE	CS1900-6	12700	7800	4500	3000	600	2800	500	3800	2700	2600	3050	200	920	600	5700
2188	2000	QSK60G6	1600 DQKB	CS2200-6	13650	8800	4500	3500	600	3050	693	3820	3000	3000	3150	325	645	600	4800
2500	2250	QSK60G6	2000 DQKC	CS2500-6	13650	8800	4500	3500	600	3050	693	3800	3000	3000	3150	325	645	600	4800

Before finalising the generator room layout design please ensure you read the guidance notes.

The attenuator dimensions indicated are based on 100mm airways and 200mm acoustic modules.

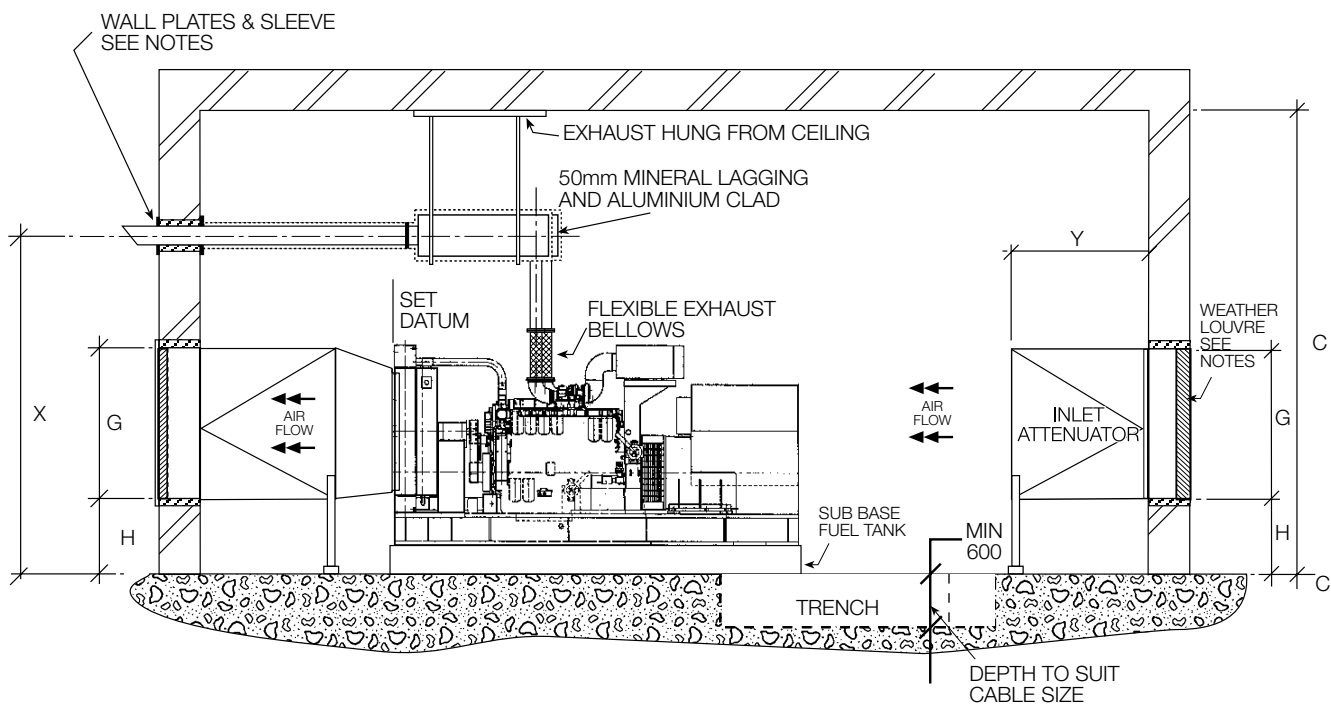
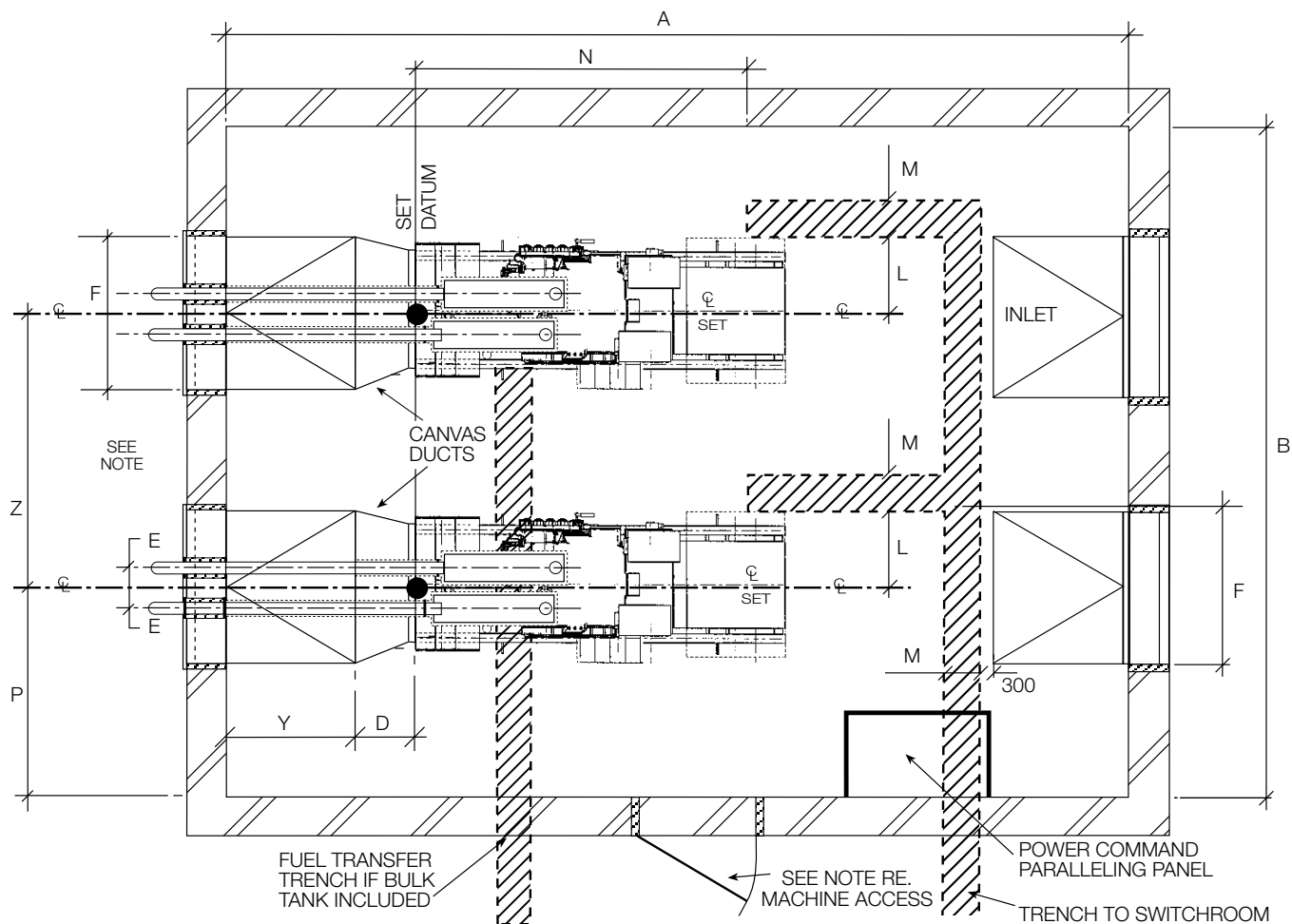
In free field conditions we would expect this treatment to achieve 85dBA at 1 metre.

RECOMMENDED ROOM SIZES

Section B/60

Cummins Generating Sets 681 - 2500 kVA – 60 Hz

Room layout for 2 Set installation with Acoustic Treatment



RECOMMENDED ROOM SIZES

Section B/60

ROOM WITH **THREE** GENERATORS INSTALLED.

CUMMINS ENGINE POWERED 681 kVA – 2500 kVA – 60 Hz GENERATING SETS **WITH ACOUSTIC TREATMENT.**

Standby Rating kVA	Prime Rating kVA	Type of ENGINE	2000 Model	1999 Model	Room dimensions			Positions			Exhaust		Attenuator Dimensions			uplift H	Cable trench position.		
					length A	width B	height C	Apart Z	back D	set C/L P	Offset E	Height X	F	Y	G		L	M	N
754	681	VTA28G5	603 DFGB	CS750-6	9000	9150	3450	2450	400	2575	400	2950	1800	1800	2150	300	775	500	3500
950	862	QST30G1	760 DFHA	CS950-6	9000	10150	4000	2850	400	2620	400	3450	2700	1500	2750	300	920	500	3900
1012	920	QST30G2	810 DFHB	CS1000-6	9000	10150	4000	2850	400	2620	400	3450	2700	1500	2750	300	920	500	3900
1156	1044	QST30G3	925 DFHC	CS1100-6	9000	10150	4000	2850	400	2620	400	3450	2700	1500	2750	300	920	500	3900
1276	1160	KTA38G4	1020 DFJD	CS1250-6	10300	10200	4000	2800	500	2700	450	3100	2100	2200	2650	200	920	600	3655
1587	1400	KTA50G3	1270 DFLE	CS1600-6	11160	10200	4000	2800	450	2700	450	3100	2100	2200	2650	200	920	600	5000
1931	1608	KTA50G9	1545 DFLE	CS1900-6	12700	10800	4500	3000	500	2800	500	3500	2700	2600	3050	200	920	600	5700
2188	2000	QSK60G6	1600 DQKB	CS2200-6	13650	12300	4500	3500	600	3050	693	3720	3000	3000	3150	325	645	600	4800
2500	2250	QSK60G6	2000 DQKC	CS2500-6	13650	12300	4500	3500	600	3050	693	3720	3000	3000	3150	325	645	600	4800

Before finalising the generator room layout design please ensure you read the guidance notes.

The attenuator dimensions indicated are based on 100mm airways and 200mm acoustic modules.

In free field conditions we would expect this treatment to achieve 85dBA at 1 metre.

ROOM WITH **FOUR** GENERATORS INSTALLED.

CUMMINS ENGINE POWERED 681 kVA – 2500 kVA – 60 Hz GENERATING SETS **WITH ACOUSTIC TREATMENT.**

Standby Rating kVA	Prime Rating kVA	Type of ENGINE	2000 Model	1999 Model	Room dimensions			Positions			Exhaust		Attenuator Dimensions			uplift H	Cable trench position.		
					length A	width B	height C	Apart Z	back D	set C/L P	Offset E	Height X	F	Y	G		L	M	N
754	681	VTA28G5	603 DFGB	CS750-6	9000	11600	3450	2450	400	2575	400	2950	1800	1800	2150	300	775	500	3500
950	862	QST30G1	760 DFHA	CS950-6	9000	13000	4000	2850	500	2620	400	3450	2700	1500	2750	300	920	500	3900
1012	920	QST30G2	810 DFHB	CS1000-6	9000	13000	4000	2850	500	2620	400	3450	2700	1500	2750	300	920	500	3900
1156	1044	QST30G3	925 DFHC	CS1100-6	9000	13000	4000	2850	500	2620	400	3450	2700	1500	2750	300	920	500	3900
1276	1160	KTA38G4	1020 DFJD	CS1250-6	10300	13000	4000	2800	500	2700	450	3200	2100	2200	2650	200	920	500	3655
1587	1400	KTA50G3	1270 DFLE	CS1600-6	11160	13000	4000	2800	500	2700	450	3100	2100	2200	2650	200	920	600	5000
1931	1608	KTA50G9	1545 DFLE	CS1900-6	12700	13800	4500	3000	600	2800	500	3800	2700	2600	3050	200	920	600	5700
2188	2000	QSK60G6	1600 DQKB	CS2200-6	13650	15800	4500	3500	600	3050	693	3800	3000	3000	3150	325	645	600	4800
2500	2250	QSK60G6	2000 DQKC	CS2500-6	13650	15800	4500	3500	600	3050	693	3800	3000	3000	3150	325	645	600	4800

Before finalising the generator room layout design please ensure you read the guidance notes.

The attenuator dimensions indicated are based on 100mm airways and 200mm acoustic modules.

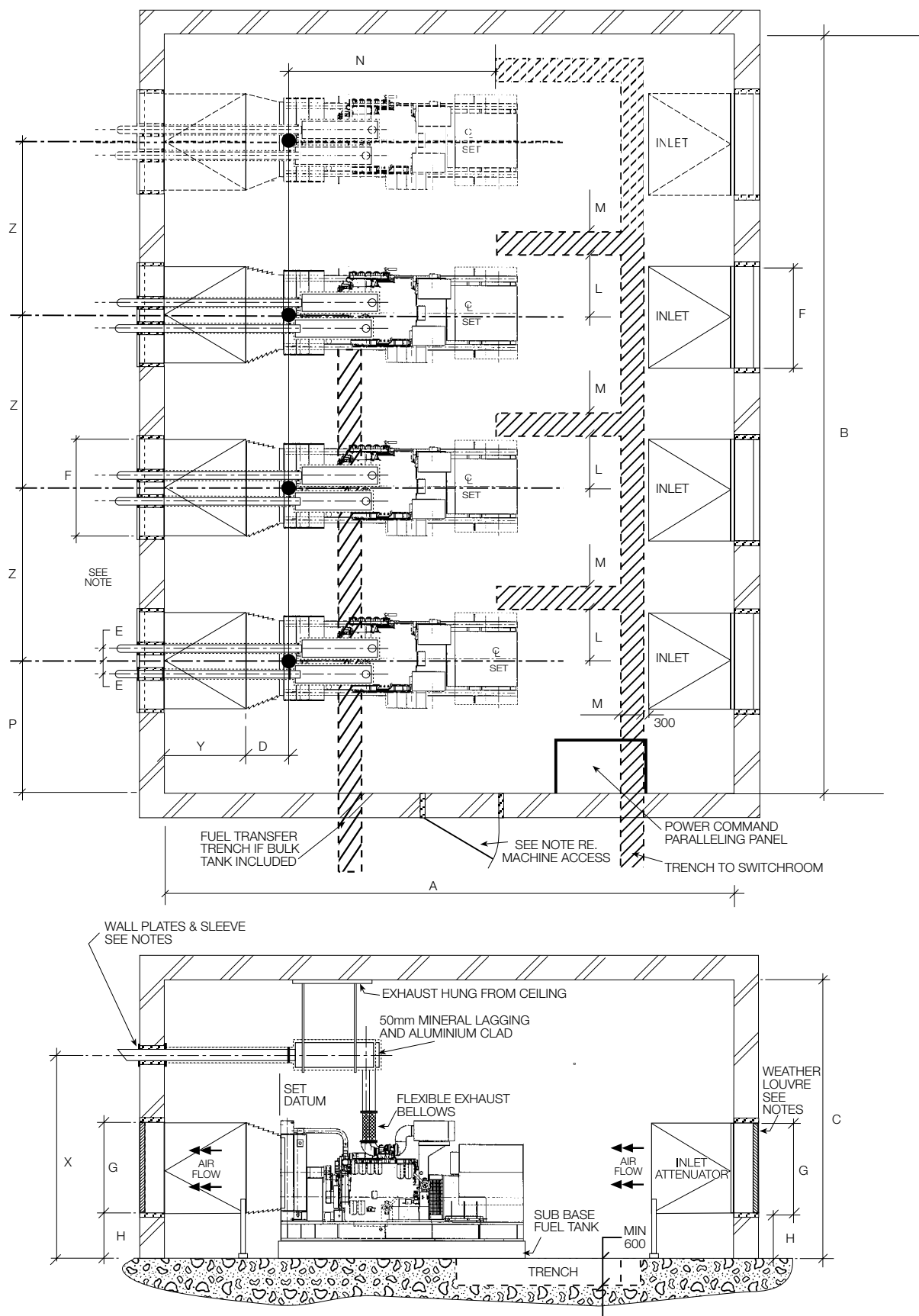
In free field conditions we would expect this treatment to achieve 85dBA at 1 metre.

RECOMMENDED ROOM SIZES

Section B/60

Cummins Generating Sets 681 - 2500 kVA – 60 Hz

Room layout for Multiple Set installation with Acoustic Treatment to Achieve 85dBA @ 1 metre



Multiple Gen Set Installations



4 x 800 kVA Gen Sets in a ground level room installation with simple but effective exhaust run.



Four 1500 kVA sets with KTA50 engines running on base load operation in Saudi Arabia.

SELECTION CHART

Section G

60 Hz Ratings Diesel Powered Generating Sets 32 kW - 2000 kW

Prime Rating		2000 Model Prime	1999 Model Prime	Standby Model		2000 Model Standby	1999 Model Standby	Cummins Engine Model
kVA	kW			kVA	kW			
40	32	32 DGGC	CP40-6	43	35	35 DGGC	CS40-6	B3.3G1
57	46	46 DGHC	CP60-6	63	52	52 DGHC	CS60-6	B3.3G2
44	36	36 DGBC	CP40-6	50	40	40 DGBC	CS50-6	4B3.9G
60	48	48 DGCA	CP60-6	64	51	51 DGCA	CS60-6	4BT3.9G1
73	59	59 DGCB	CP70-6	81	65	65 DGCB	CS80-6	4BT3.9G2
83	66	66 DGCC	CP80-6	89	72	72 DGCC	CS90-6	4BTA3.9G2
95	76	76 DGDA	CP100-6	106	85	85 DGDA	CS100-6	6BT5.9G1
119	95	95 DGDB	CP125-6	131	105	105 DGDB	CS125-6	6BT5.9G2
153	122	122 DGEA	CP160-6	167	133	133 DGEA	CS170-6	6CT8.3G2
210	168	168 DGFB	CP200-6	228	182	182 DGFB	CS200-6	6CTA8.3G2
254	203	203 DFAB	CP250-6	250	200	200 DFAB	CS250-6	LTA10G2
286	229	229 DFAC	CP300-6	315	252	252 DFAC	CS300-6	LTA10G1
351	281	281 DFCB	CP350-6	390	312	312 DFCB	CS400-6	NTA855G2
402	322	322 DFCC	CP400-6	437	350	350 DFCC	CS450-6	NTA855G3
439	351	351 DFEB	CP450-6	500	400	400 DFEB	CS500-6	KTA19G2
504	403	403 DFEC	CP500-6	562	450	450 DFEC	CS550-6	KTA19G3
561	449	449 DFED	CP550-6	626	501	501 DFED	CS625-6	KTA19G4
681	545	545 DFGB	CP700-6	754	603	603 DFGB	CS750-6	VTA28G5
862	690	690 DFHA	CP850-6	950	760	760 DFHA	CS950-6	QST30G1
920	736	736 DFHB	CP900-6	1012	810	810 DFHB	CS1000-6	QST30G2
1044	835	835 DFHC	CP1000-6	1156	925	925 DFHC	CS1100-6	QST30G3
1160	928	928 DFJD	CP1100-6	1276	1020	1020 DFJD	CS1250-6	KTA38G4
1400	1120	1120 DFLE	CP1400-6	1587	1270	1270 DFLE	CS1600-6	KTA50G3
1608	1286	1286 DFLE	CP1600-6	1931	1545	1545 DFLE	CS1900-6	KTA50G9
2000	1600	1600 DQKB	CP2000-6	2188	1750	1750 DQKB	CS2200-6	QSK60G6
2250	1800	1800 DQKC	CP2250-6	2500	2000	2000 DQKC	CS2500-6	QSK60G6

Rating Conditions:

All ratings at 40°C (104°F) ambient temperature with a 50°C (122°F) radiator.

Ratings: Prime (Unlimited Running Time), applicable for supplying power in lieu of commercially-purchased power.

Prime power is available at a variable load for an unlimited number of hours. A 10% overload capacity is available. Nominally rated. All in accordance with ISO 8528, ISO 3046, AS 2789, DIN 6271 and BS 5514.

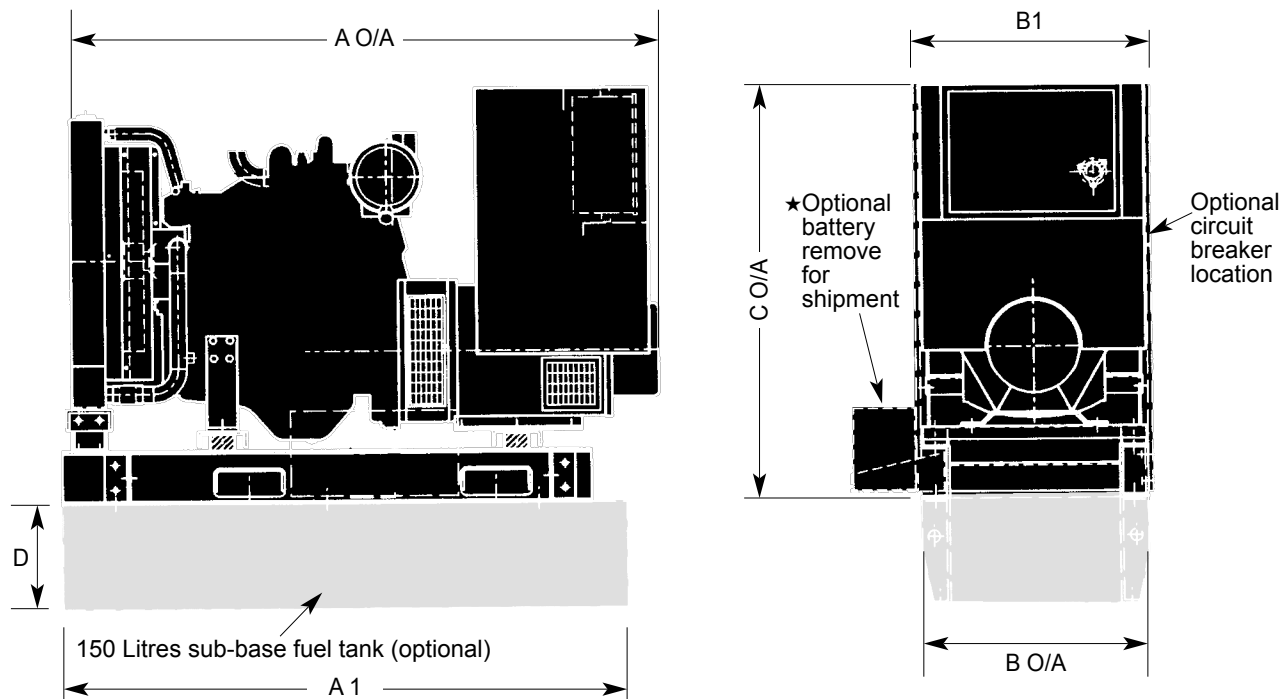
Standby: Applicable for supplying emergency power for the duration of normal power interruption. No sustained overload capability is available for this rating. Nominally rated. In accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.

TECHNICAL DATA

Dimensions & Weights 60 Hz

Section G

B3 Series Engines



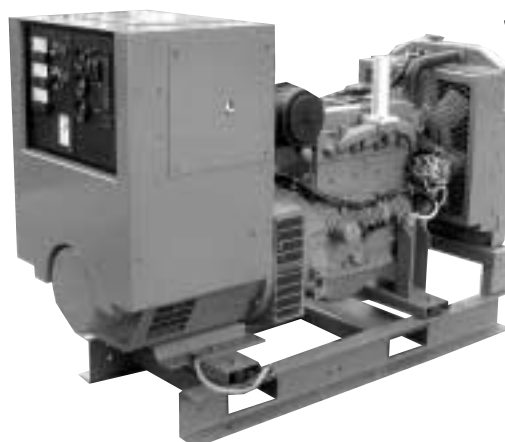
New Model	Old Model	Engine	Length A mm	A1 mm	Width B mm	B1 mm	Height C mm	D mm	Set weight kg wet	Set weight kg dry	Sub base Tank. Dry Weight kg	Sub base Tank. Wet Weight kg
32 DGGC	CP40-6	B3.3G1	1667	1600	645	671	1175	300	832	813	185	310
46 DGHC	CP60-6	B3.3G2	1667	1600	645	671	1175	300	841	820	185	310

NOTE 1:
★ Dry and Wet weights of sets do NOT include fuel tank or contents.

Set weights are **without** sub-base tank. Dimensions and weights are for **guidance** only.
Sub-base tank weights are for single skin tanks.
Do not use for installation design. Ask for certified drawings on your specific application.
Specifications may change without notice.

TECHNICAL DATA

32 kW - 52 kW 60 Hz B3 Series Engines



Generating Sets – 60 Hz

Set output	220-480 V 60 Hz	220-480 V 60 Hz
Prime at 40°C ambient	32 kWe 40 kVA	46 kWe 57 kVA
1999 Set Model (Prime)	CP40-6	CP60-6
New Model (Prime)	32 DGGC	46 DGHC
Standby at 40°C ambient	35 kWe 43 kVA	52 kWe 63 kVA
1999 Set Model (Standby)	CS40-6	CS60-6
New Model (Standby)	35 DGGC	52 DGHC
Engine Make	Cummins	Cummins
Model	B3.3G1	B3.3G2
Cylinders	Four	Four
Engine build	In-line	In-line
Governor/Class	Mechanical/G2	Mechanical/G2
Aspiration	Natural aspiration	Turbocharged
Bore and stroke	95 mm x 115 mm	95 mm x 115 mm
Compression ratio	8.2	17
Cubic capacity	3.26 Litres	3.26 Litres
Starting/Min °C	Unaided/-4°C	Unaided/-4°C
Battery capacity	126 A/hr	126 A/hr
Nett Engine output @ flywheel @ Prime	36.6 kWm	52.7 kWm
Nett at Engine output @ flywheel @ Standby	40.3 kWm	59.3 kWm
Maximum load acceptance @ single step	100%	100%
Speed	1800 rpm	1800 rpm
Alternator voltage regulation	±1.5%	±1.5%
Alternator insulation class	H	H
Single load step to NFPA110	100%	100%
Fuel consumption (Prime) 100% load	8.7 l/hr	13.3 l/hr
Fuel consumption (Standby) 100% load	9.8 l/hr	14.8 l/hr
Lubrication oil capacity	8 Litres	8 Litres
Base fuel tank capacity – open set	150 Litres	150 Litres
Coolant capacity – radiator and engine	11.5 Litres	14 Litres
Exhaust temp @ full load standby	460°C	510°C
Exhaust gas flow @ full load standby	424 m³/hr	608 m³/hr
Exhaust gas back pressure max	76 mm Hg	76 mm Hg
Air flow – radiator @ 0mm back pressure	8430 m³/hr	5866 m³/hr
Air intake – engine	144 m³/hr	231 m³/hr
Minimum air opening to room*	0.48 sq m	0.63 sq m
Minimum discharge opening*	0.36 sq m	0.47 sq m
Pusher fan head (duct allowance)	12 mm Wg	12 mm Wg
Total heat radiated to ambient	13.1 kW	21.1 kW
Engine derating for altitude	0.7% per 100 m above 1000 m	0.9% per 100 m above 1000 m
Engine derating for temperature	1% per 10°C above 40°C	4.5% per 10°C above 40°C

In accordance with ISO 8528, ISO 3046.

Prime: Continuous running at variable load for unlimited periods with 10% overload available for 1 hour in any 12 hour period.

Standby: Continuous running at variable load for duration of an emergency.

Prime and standby ratings are outputs at 40°C (104°F) ambient temperature and 1000m altitude reference.

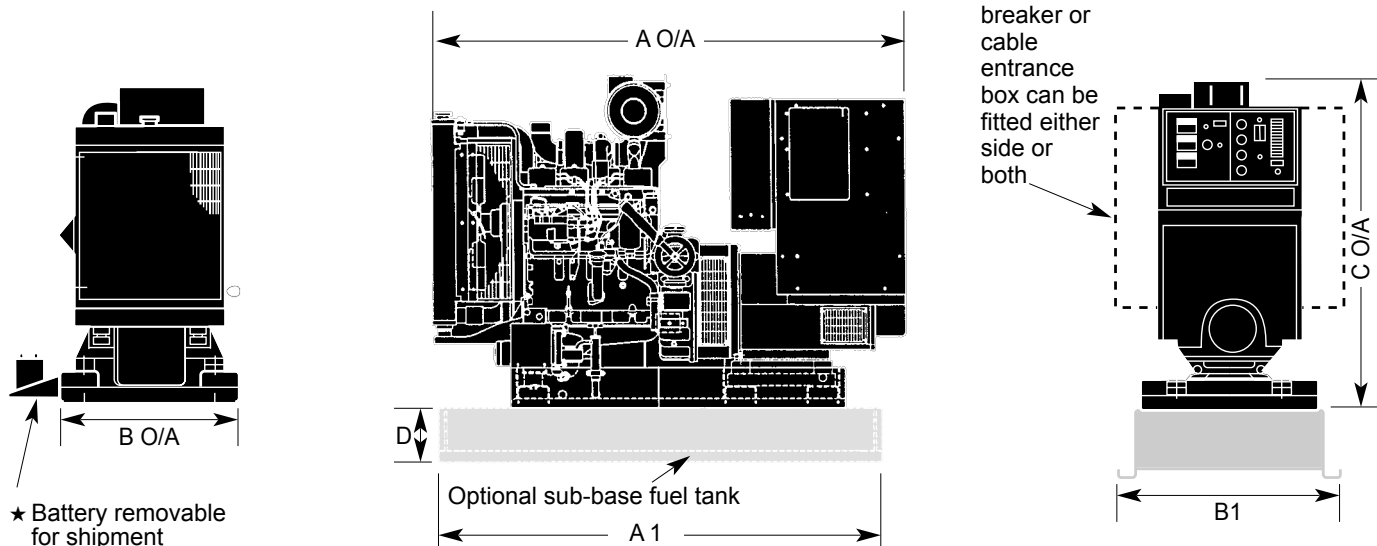
*Subject to 6mm Wg each, inlet and outlet restriction.

TECHNICAL DATA

Dimensions & Weights 60 Hz

Section G

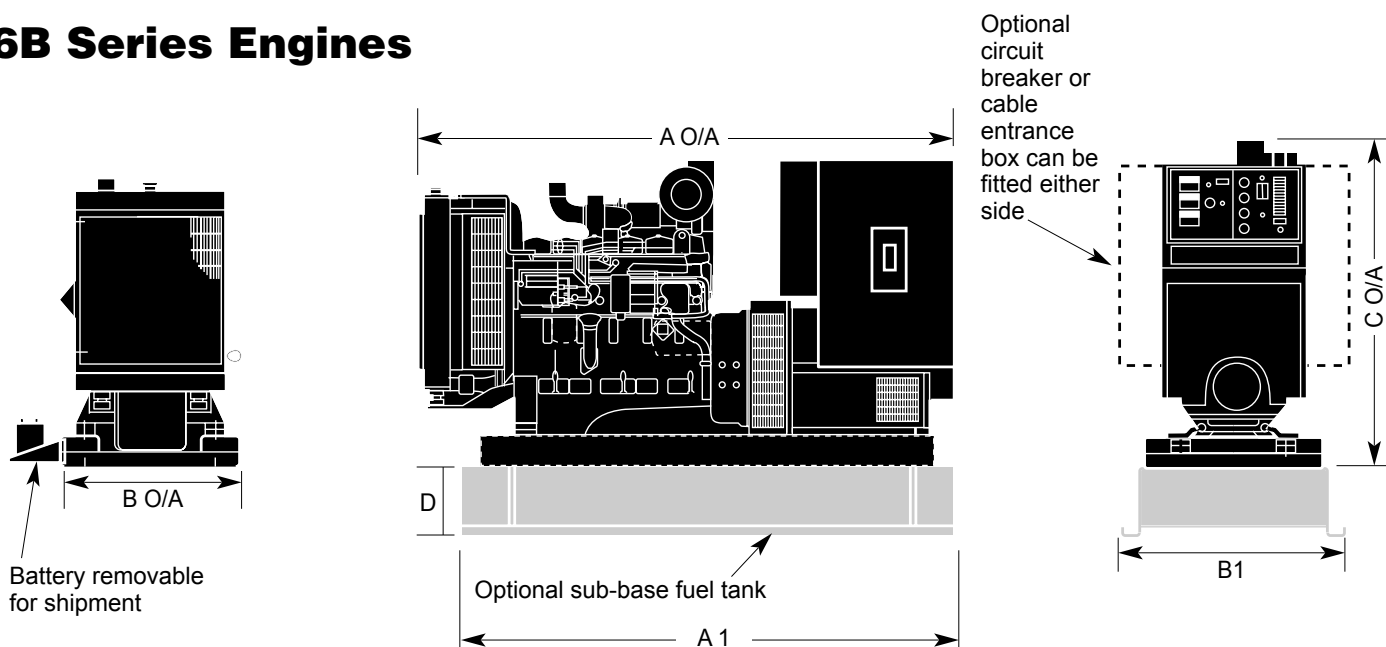
4B Series Engines



New Model	Old Model	Engine	Length A mm	A1 mm	Width B1 mm	B mm	Height C mm	D mm	Set weight kg wet	Set weight kg dry	Sub base Tank. Dry Weight kg	Sub base Tank. Wet Weight kg
36 DGBC	CP40-6	4B3.9G	1720	1675	840	675	1345	200	800	772	150	310
48 DGCA	CP60-6	4BT3.9G1	1810	1675	840	675	1245	200	870	842	150	310
59 DGCB	CP70-6	4BT3.9G2	1810	1675	840	675	1245	200	920	892	150	310
66 DGCC	CP80-6	4BTA3.9G2	1847	1675	840	675	1377	200	975	938	150	310

NOTE 1: ★ Battery/tray extends out 260 mm from side when fitted. ★ Dry and Wet weights of sets do NOT include fuel tank or contents.

6B Series Engines



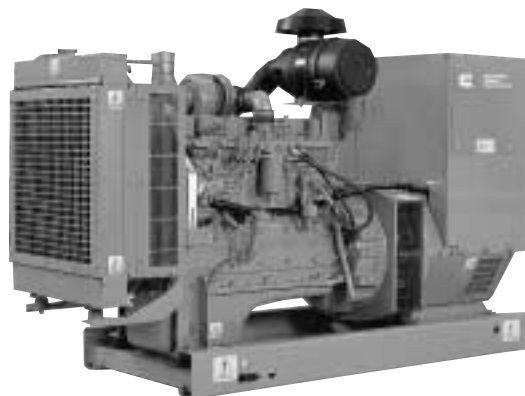
New Model	Old Model	Engine	Length A mm	A1 mm	Width B1 mm	B mm	Height C mm	D mm	Set weight kg wet	Set weight kg dry	Sub base Tank. Dry Weight kg	Sub base Tank. Wet Weight kg
76 DGDA	CP100-6	6BT5.9G1	2087	1675	840	675	1337	200	1100	1060	150	310
95 DGDB	CP125-6	6BT5.9G2	2162	1675	840	675	1337	200	1175	1131	150	310

NOTE 1: ★ Battery tray extends out 260 mm from side – when fitted. ★ Dry and Wet weights of sets do NOT include fuel tank or contents.

Weights are **without** sub-base tank. Dimensions and weights are for **guidance** only. Do not use for installation design. Ask for certified drawings on your specific application. Specifications may change without notice.

TECHNICAL DATA

36 kW - 72 kW 60 Hz 4B Series Engines



Generating Sets – 60 Hz

Set output	220-480 V 60 Hz	220-480 V 60 Hz	220-480 V 60 Hz	220-480 V 60 Hz
Prime at 40°C ambient	36 kWe 44 kVA	48 kWe 60 kVA	59 kWe 73 kVA	66 kWe 83 kVA
1999 Set Model (Prime)	CP40-6	CP60-6	CP70-6	CP80-6
New Model (Prime)	36 DGBC	48 DGCA	59 DGCB	66 DGCC
Standby at 40°C ambient	40 kWe 50 kVA	51 kWe 64 kVA	65 kWe 81 kVA	72 kWe 89 kVA
1999 Set Model (Standby)	CS50-6	CS60-6	CS80-6	CS90-6
New Model (Standby)	40 DGBC	51 DGCA	65 DGCB	72 DGCC
Engine Make	Cummins	Cummins	Cummins	Cummins
Model	4B3.9G	4BT3.9G1	4BT3.9G2	4BTA3.9G2
Cylinders	Four	Four	Four	Four
Engine build	In-line	In-line	In-line	In-line
Governor/Class	Mechanical	Mechanical	Mechanical	Mechanical
Aspiration and cooling	Natural aspiration	Turbocharged	Turbocharged	Turbocharged
Bore and stroke	102 mm x 120 mm	102 mm x 120 mm	102 mm x 120 mm	102 mm x 120 mm
Compression ratio	17.3:1	16.5:1	16.5:1	16.5:1
Cubic capacity	3.92 Litres	3.92 Litres	3.92 Litres	3.92 Litres
Starting/Min °C	Unaided/-12°C	Unaided/-12°C	Unaided/-12°C	Unaided/-12°C
Battery capacity	165 A/hr	165 A/hr	165 A/hr	165 A/hr
Nett Engine output – Prime	40 kWm	54 kWm	65 kWm	73 kWm
Nett at flywheel – Standby	46 kWm	60 kWm	72 kWm	80 kWm
Speed	1800 rpm	1800 rpm	1800 rpm	1800 rpm
Alternator voltage regulation	±1.0%	±1.0%	±1.0%	±1.0%
Alternator insulation class	H	H	H	H
Single load step to NFPA110 para 5.13.2.6	100%	100%	100%	100%
Fuel consumption (Prime) 100% load	12.8 l/hr	14.99 l/hr	17.6 l/hr	18.0 l/hr
Fuel consumption (Standby) 100% load	14.5 l/hr	16.43 l/hr	19.5 l/hr	20.0 l/hr
Lubrication oil capacity	9.5 Litres	9.5 Litres	9.5 Litres	9.5 Litres
Base fuel tank capacity – open set	197 Litres	197 Litres	197 Litres	197 Litres
Coolant capacity – radiator and engine	21 Litres*	21 Litres*	21 Litres*	21 Litres*
Exhaust temp – full load prime	604°C	463°C	510°C	461°C
Exhaust gas flow – full load prime	550 m³/hr	630 m³/hr	713 m³/hr	810 m³/hr
Exhaust gas back pressure max	76 mm Hg	76 mm Hg	76 mm Hg	76 mm Hg
Air flow – radiator	2.9 m³/s	2.9 m³/s	2.9 m³/s	2.27 m³/s
Air intake – engine	180 m³/hr	237 m³/hr	252 m³/hr	349 m³/hr
Minimum air opening to room	0.7 sq m	0.7 sq m	0.7 sq m	0.7 sq m
Minimum discharge opening	0.5 sq m	0.5 sq m	0.5 sq m	0.5 sq m
Pusher fan head (duct allowance)	10 mm Wg*	10 mm Wg*	10 mm Wg*	10 mm Wg*
Total heat radiated to ambient	11.4 kW	15 kW	17 kW	18 kW
Engine derating – altitude	3% per 300 m above 150 m	4% per 300 m above 1525 m	4% per 300 m above 1220 m	4% per 300 m above 1220 m
Engine derating – temperature	2% per 11°C above 40°C	2% per 11°C above 40°C	2% per 11°C above 40°C	2% per 11°C above 40°C

In accordance with ISO 8528, BS5514.

Prime: Continuous running at variable load for unlimited periods with 10% overload available for 1 hour in any 12 hour period.

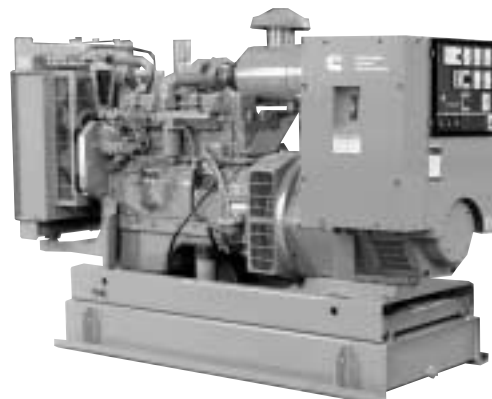
Standby: Continuous running at variable load for duration of an emergency.

Prime and standby ratings are outputs at 40°C (104°F) ambient temperature reference.

*Subject to factory verification.

TECHNICAL DATA

76 kW - 105 kW 60 Hz 6B Series Engines



Generating Sets – 60 Hz

Set output	220-480 V 60 Hz	220-480 V 60 Hz
Prime at 40°C ambient	76 kWe 95 kVA	95 kWe 119 kVA
1999 Set Model (Prime)	CP100-6	CP125-6
New Model (Prime)	76 DGDA	95 DGDB
Standby at 40°C ambient	85 kWe 106 kVA	105 kWe 131 kVA
1999 Set Model (Standby)	CS100-6	CS125-6
New Model (Standby)	85 DGDA	105 DGDB
Engine Make	Cummins	Cummins
Model	6BT5.9G1	6BT5.9G2
Cylinders	Six	Six
Engine build	In-line	In-line
Governor/Class	Mechanical	Mechanical
Aspiration and cooling	Turbocharged	Turbocharged
Bore and stroke	102 mm x 120 mm	102 mm x 120 mm
Compression ratio	17.5:1	17.5:1
Cubic capacity	5.88 Litres	5.88 Litres
Starting/Min °C	Unaided/-12°C	Unaided/-12°C
Battery capacity	165 A/hr	165 A/hr
Nett Engine output – Prime	83 kWm	106 kWm
Nett at flywheel – Standby	95 kWm	118 kWm
Speed	1800 rpm	1800 rpm
Alternator voltage regulation	±1.0%	±1.0%
Alternator insulation class	H	H
Single load step to NFPAII0	100%	100%
Fuel consumption (Prime) 100% load	23.4 l/hr	27.1 l/hr
Fuel consumption (Standby) 100% load	25.7 l/hr	29.8 l/hr
Lubrication oil capacity	14.3 Litres	14.3 Litres
Base fuel tank capacity – open set	200 Litres	200 Litres
Coolant capacity – radiator and engine	22.4 Litres	23.3 Litres
Exhaust temp – full load prime	482°C	543°C
Exhaust gas flow – full load prime	1036 m³/hr	1267 m³/hr
Exhaust gas back pressure max	76 mm Hg	76 mm Hg
Air flow – radiator	2.5 m³/s*	2.3 m³/s*
Air intake – engine	392 m³/hr	443 m³/hr
Minimum air opening to room	0.7 sq m	0.7 sq m
Minimum discharge opening	0.5 sq m	0.5 sq m
Pusher fan head (duct allowance)	10 mm Wg*	10 mm Wg*
Total heat radiated to ambient (Engine)	22 kW	25 kW
Engine derating – altitude	4% per 300 m above 2285 m	4% per 300 m above 2285 m
Engine derating – temperature	2% per 11°C above 40°C	2% per 11°C above 40°C

In accordance with ISO 8528, BS5514.

Prime: Continuous running at variable load for unlimited periods with 10% overload available for 1 hour in any 12 hour period.

Standby: Continuous running at variable load for duration of an emergency.

Prime and standby ratings are outputs at 40°C (104°F) ambient temperature reference.

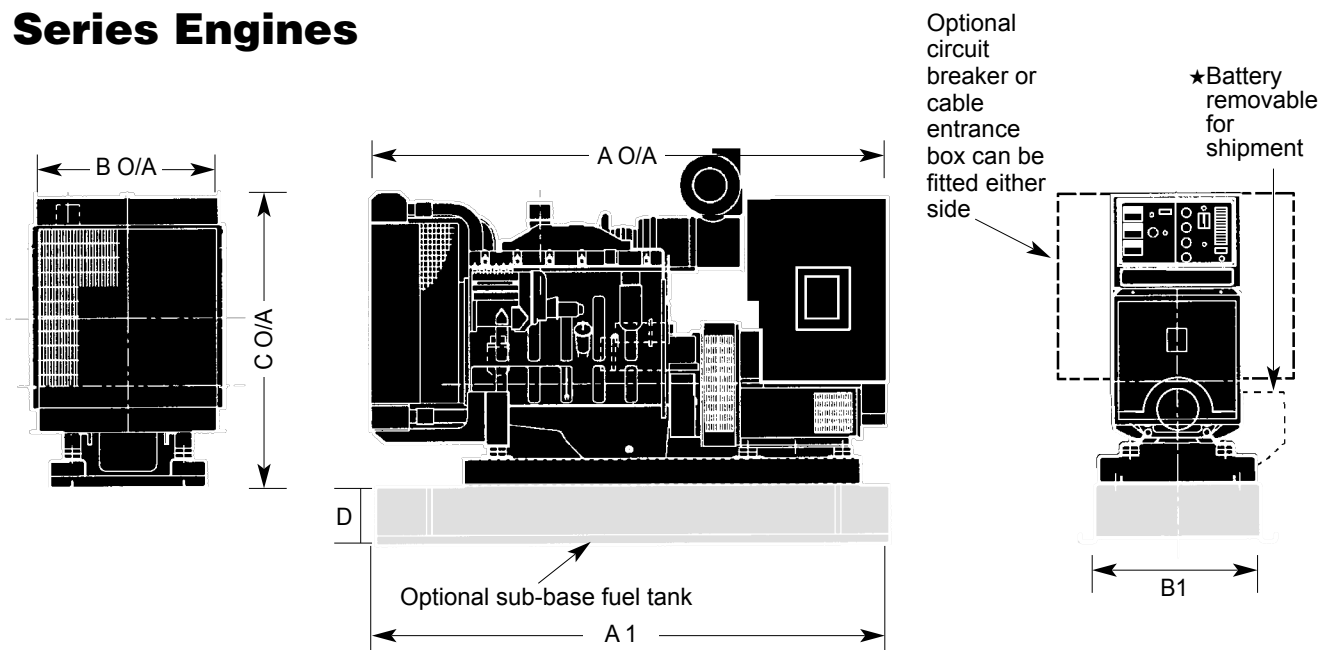
*Subject to factory verification.

TECHNICAL DATA

Dimensions & Weights 60 Hz

Section G

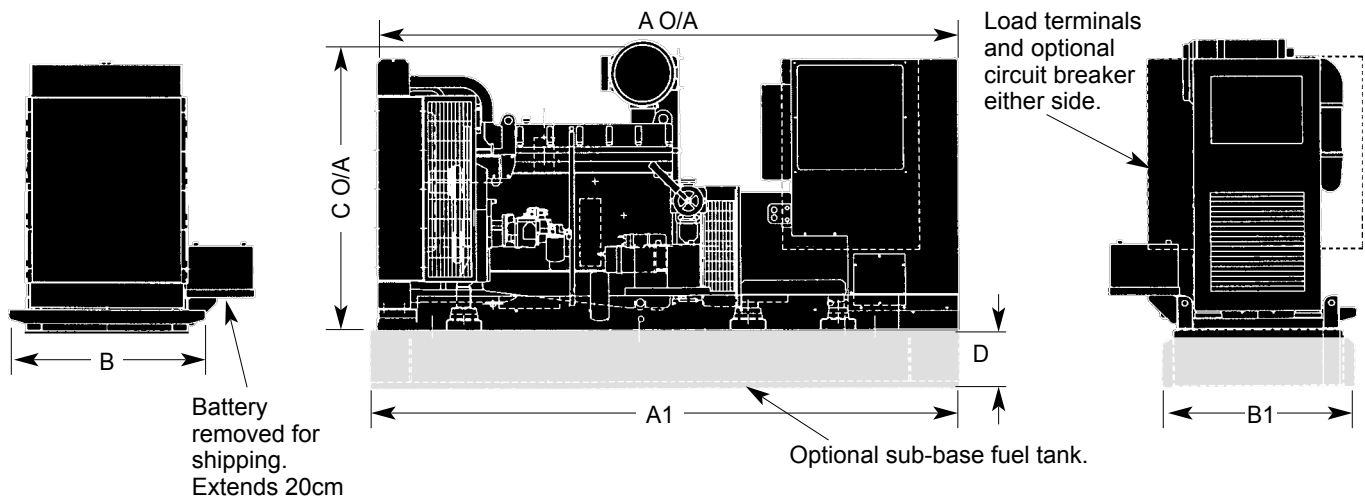
6C Series Engines



New Model	Old Model	Engine	Length A mm	A1 mm	Width B1 mm	B mm	Height C mm	D mm	Set weight kg wet	Set weight kg dry	Sub base Tank. Dry Weight kg	Sub base Tank. Wet Weight kg
122 DGEA	CP150-6	6CT8.3G2	2332	2200	840	831	1412	250	1550	1498	210	490
168 DGFB	CP200-6	6CTA8.3G2	2389	2200	840	831	1412	250	1760	1704	210	490

NOTE 1:
★ Battery tray extends out 260 mm from side – when fitted. ★ Dry and Wet weights of sets do NOT include fuel tank or contents.

LTA10 Series Engines

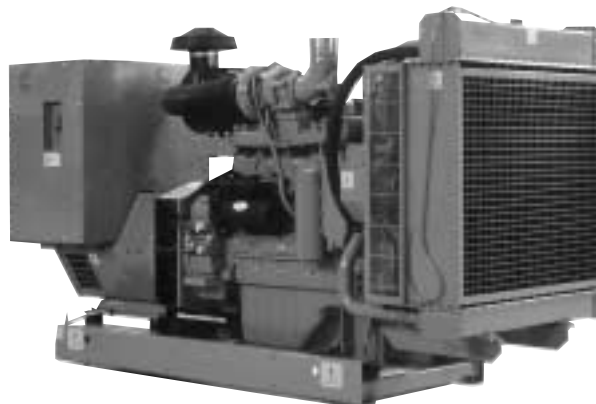


New Model	Engine	Old Model	Dimensions and Weights (mm/kg)						Set Weight kg Dry	Set Weight kg Wet	Tank (dry) Weight kg	Tank (wet) Weight kg
			A	A1	B	B1	C	D				
203 DFAB	LTA10G2	CP250-6	2980	3338	1048	1050	1644	300	2230	2300	445	1085
229 DFAC	LTA10G1	CP300-6	2980	3338	1048	1050	1644	300	2332	2380	445	1085

Set weights are **without** sub-base tank.
Dimensions and weights are for **guidance** only. Do not use for installation design. Ask for certified drawings on your specific application.
Specifications may change without notice.

TECHNICAL DATA

122 kW - 182 kW 60 Hz 6C Series Engines



Generating Sets – 60 Hz

Set output	220-480 V 60 Hz	220-480 V 60 Hz
Prime at 40°C ambient	122 kWe 153 kVA	168 kWe 210 kVA
1999 Set Model (Prime)	CP150-6	CP200-6
New Model (Prime)	122 DGEA	168 DGFB
Standby at 40°C ambient	133 kWe 167 kVA	182 kWe 228 kVA
1999 Set Model (Standby)	CS170-6	CS200-6
New Model (Standby)	133 DGEA	182 DGFB
Engine Make	Cummins	Cummins
Model	6CT8.3G2	6CTA8.3G2
Cylinders	Six	Six
Engine build	In-line	In-line
Governor/Class	Mechanical	Mechanical
Aspiration and cooling	Turbocharged	Turbo Aftercharged
Bore and stroke	114 mm x 135 mm	114 mm x 135 mm
Compression ratio	16.8:1	16.5:1
Cubic capacity	8.3 Litres	8.3 Litres
Starting/Min °C	Unaided/-12°C	Unaided/-12°C
Battery capacity	165 A/hr	165 A/hr
Nett Engine output – Prime	132 kWm	180 kWm
Nett at flywheel – Standby	146 kWm	199 kWm
Speed	1800 rpm	1800 rpm
Alternator voltage regulation	±1.0%	±1.0%
Alternator insulation class	H	H
Single load step to NFPAll0	100%	100%
Fuel consumption (Prime) 100% load	37 l/hr	46 l/hr
Fuel consumption (Standby) 100% load	41 l/hr	51 l/hr
Lubrication oil capacity	23.8 Litres	23.8 Litres
Base fuel tank capacity – open set	330 Litres	330 Litres
Coolant capacity – radiator and engine	26 Litres	28 Litres
Exhaust temp – full load prime	511°C	591°C
Exhaust gas flow – full load prime	1872 m³/hr	2343 m³/hr
Exhaust gas back pressure max	76 mm Hg	76 mm Hg
Air flow – radiator*	4.4 m³/s	3.9 m³/s
Air intake – engine	752 m³/hr	781 m³/hr
Minimum air opening to room	0.9 sq m	0.9 sq m
Minimum discharge opening	0.6 sq m	0.6 sq m
Pusher fan head (duct allowance)*	13 mm Wg*	13 mm Wg*
Total heat radiated to ambient (Engine)	36 kW	40 kW
Engine derating – altitude	4% per 300 m above 1525 m	4% per 300 m above 1525 m
Engine derating – temperature	2% per 11°C above 40°C	2% per 5°C above 40°C

In accordance with ISO 8528, BS5514.

Prime: Continuous running at variable load for unlimited periods with 10% overload available for 1 hour in any 12 hour period.

Standby: Continuous running at variable load for duration of an emergency.

Prime and standby ratings are outputs at 40°C (104°F) ambient temperature reference.

*Subject to factory verification.

TECHNICAL DATA

203 kW - 252 kW 60 Hz LTA10 Series Engines



Generating Sets – 60 Hz

Set output	220-480 V 60 Hz	220-480 V 60 Hz
Prime at 40°C ambient	203 kWe 254 kVA	229 kWe 286 kVA
1999 Set Model (Prime)	CP250-6	CP300-6
New Model (Prime)	203 DFAB	229 DFAC
Standby at 40°C ambient	200 kWe 250 kVA	252 kWe 315 kVA
1999 Set Model (Standby)	CS250-6	CS300-6
New Model (Standby)	200 DFAB	252 DFAC
Engine Make	Cummins	Cummins
Model	LTA10G2	LTA10G1
Cylinders	Six	Six
Engine build	In-line	In-line
Governor/Class	Electronic/A1	Electronic/A1
Aspiration and cooling	Turbo Aftercooled	Turbo Aftercooled
Bore and stroke	125 mm x 136 mm	125 mm x 136 mm
Compression ratio	16.0:1	16.0:1
Cubic capacity	10 Litres	10 Litres
Starting/Min °C	Unaided/-1°C	Unaided/-1°C
Battery capacity	2 x 127 A/hr	2 x 127 A/hr
Nett Engine output – Prime	220 kWm	246 kWm
Nett at flywheel – Standby	246 kWm	272 kWm
Speed	1800 rpm	1800 rpm
Alternator voltage regulation	±1.0%	±1.0%
Alternator insulation class	H	H
Single load step to NFPAll0	100%	100%
Fuel consumption (Prime) 100% load	56.4 l/hr	59 l/hr
Fuel consumption (Standby) 100% load	63.2 l/hr	64.7 l/hr
Lubrication oil capacity	36 Litres	36 Litres
Base fuel tank capacity – open set	675 Litres	675 Litres
Coolant capacity – radiator and engine	61.8 Litres	61.8 Litres
Exhaust temp – full load prime	485°C	504°C
Exhaust gas flow – full load prime	2812 m³/hr	2794 m³/hr
Exhaust gas back pressure max	76 mm Hg	76 mm Hg
Air intake – engine	1069 m³/hr	1037 m³/hr
Air flow – radiator (50°C)	6.5 m³/s	6.5 m³/s
Pusher fan head (duct allowance) 50°C	13 mm Wg	13 mm Wg
Total heat radiated to ambient	50 kW	55 kW
Engine derating – altitude	4% per 300 m above 1220 m	4% per 300 m above 1525 m
Engine derating – temperature	2% per 11°C above 40°C	2% per 11°C above 40°C

In accordance with ISO 8528, BS5514.

Prime: Continuous running at variable load for unlimited periods with 10% overload available for 1 hour in any 12 hour period.

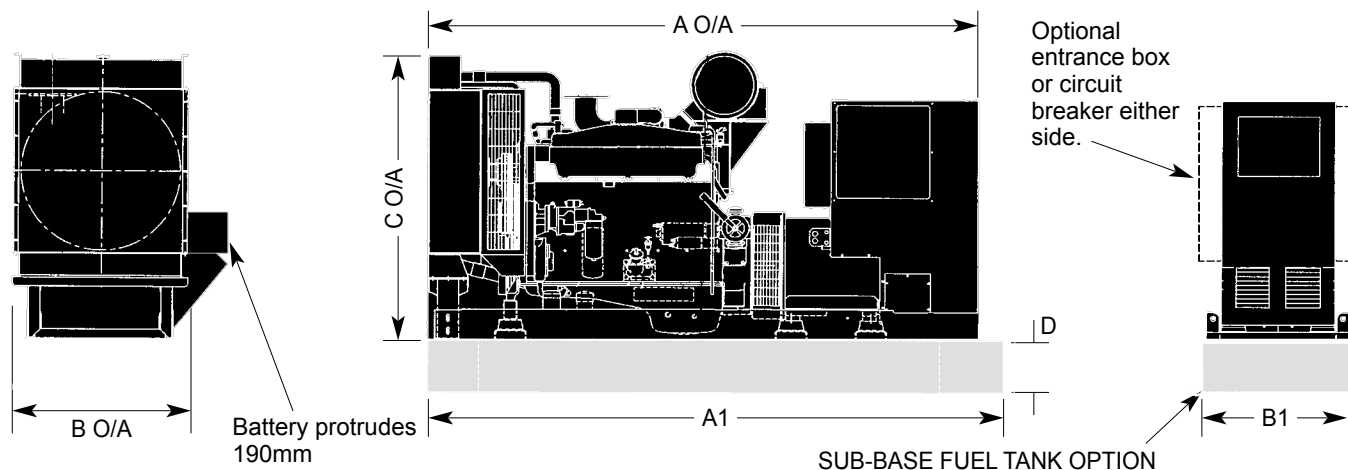
Standby: Continuous running at variable load for duration of an emergency.

TECHNICAL DATA

Dimensions & Weights 60 Hz

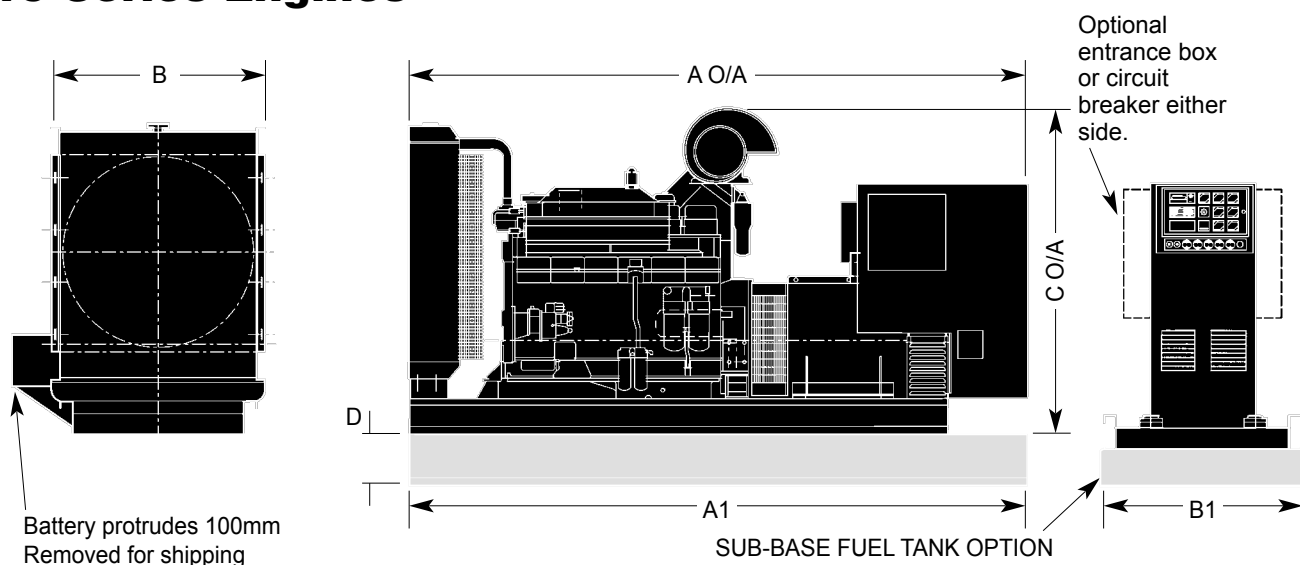
Section G

NT855 Series Engines



New Model	Engine	Old Model	Dimensions and Weights (mm/kg)						Set Weight	Set Weight	Tank Weight	Tank Weight
			A	A1	B	B1	C	D	kg Dry	kg Wet	kg (dry)	kg (wet)
281 DFCB	NTA855G2	CP350-6	3286	3338	990	1048	1117	300	3178	3275	445	1085
322 DFCC	NTA855G3	CP400-6	3304	3338	990	1048	1117	300	3293	3390	445	1085

K19 Series Engines



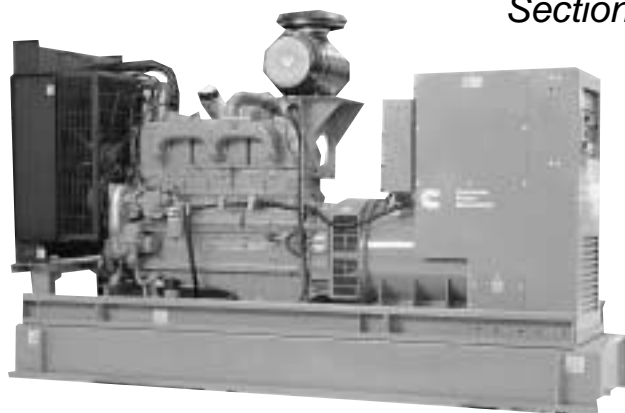
New Model	Engine	Old Model	Dimensions and Weights (mm/kg)						Set Weight	Set Weight	Tank Weight	Tank Weight
			A	A1	B	B1	C	D	kg Dry	kg Wet	kg (dry)	kg (wet)
351 DFEB	KTA19G2	CP450-6	3490	3875	1266	1350	1830	300	4136	4270	580	1580
403 DFEC	KTA19G3	CP500-6	3490	3875	1266	1350	1830	300	4276	4410	580	1580
449 DFED	KTA19G4	CP550-6	3490	3875	1266	1350	1830	300	4276	4410	580	1580

Set weights are **without** sub-base tank.

Dimensions and weights are for **guidance** only. Do not use for installation design. Ask for certified drawings on your specific application. Specifications may change without notice.

TECHNICAL DATA

281 kW - 350 kW 60 Hz NT855 Series Engines



Generating Sets – 60 Hz

Set output	220-480 V 60 Hz	220-480 V 60 Hz
Prime at 40°C ambient	281 kWe 351 kVA	322 kWe 402 kVA
1999 Set Model (Prime)	CP350-6	CP400-6
New Model (Prime)	281 DFCB	322 DFCC
Standby at 40°C ambient	312 kWe 390 kVA	350 kWe 437 kVA
1999 Set Model (Standby)	CS400-6	CS450-6
New Model (Standby)	312 DFCB	350 DFCC
Engine Make	Cummins	Cummins
Model	NTA855G2	NTA855G3
Cylinders	Six	Six
Engine build	In-line	In-line
Governor/Class	Electronic/A1	Electronic/A1
Aspiration and cooling	Turbo Aftercooled	Turbo Aftercooled
Bore and stroke	140 mm x 152 mm	140 mm x 152 mm
Compression ratio	14.0:1	14.0:1
Cubic capacity	14 Litres	14 Litres
Starting/Min °C	Unaided/-7°C	Unaided/-7°C
Battery capacity	127 A/hr	127 A/hr
Nett Engine output – Prime	299 kWm	344 kWm
Nett at flywheel – Standby	333 kWm	385 kWm
Speed	1800 rpm	1800 rpm
Alternator voltage regulation	±1.0%	±1.0%
Alternator insulation class	H	H
Single load step to NFPAll0	100%	100%
Fuel consumption (Prime) 100% load	79 l/hr	87 l/hr
Fuel consumption (Standby) 100% load	89 l/hr	96 l/hr
Lubrication oil capacity	38.6 Litres	38.6 Litres
Base fuel tank capacity – open set	800 Litres	800 Litres
Coolant capacity – radiator and engine	79.8 Litres	84.8 Litres
Exhaust temp – full load prime	466°C	521°C
Exhaust gas flow – full load prime	4136 m³/hr	4734 m³/hr
Exhaust gas back pressure max	76 mm Hg	76 mm Hg
Air intake – engine	1613 m³/hr	1717 m³/hr
Air flow – radiator (50°C)	9.7 m³/s	9.2 m³/s
Pusher fan head (duct allowance) 50°C	13 mm Wg	13 mm Wg
Total heat radiated to ambient	72 kW	76 kW
Engine derating – altitude	4% per 300 m above 1525 m	4% per 300 m above 1525 m
Engine derating – temperature	2% per 11°C above 40°C	2% per 11°C above 40°C

In accordance with ISO 8528, BS5514.

Prime: Continuous running at variable load for unlimited periods with 10% overload available for 1 hour in any 12 hour period.

Standby: Continuous running at variable load for duration of an emergency.

TECHNICAL DATA

351 kW - 453 kW 60 Hz K19 Series Engines



Generating Sets – 60 Hz

Set output	220-480 V 60 Hz	220-480 V 60 Hz	220-480 V 60 Hz
Prime at 40°C ambient	351 kWe 439 kVA	403 kWe 504 kVA	449 kWe 561 kVA
1999 Set Model (Prime)	CP450-6	CP500-6	CP550-6
New Model (Prime)	351 DFEB	403 DFEC	449 DFED
Standby at 40°C ambient	400 kWe 500 kVA	450 kWe 562 kVA	501 kWe 626 kVA
1999 Set Model (Standby)	CS500-6	CS550-6	CS625-6
New Model (Standby)	400 DFEB	450 DFEC	501 DFED
Engine Make	Cummins	Cummins	Cummins
Model	KTA19G2	KTA19G3	KTA19G4
Cylinders	Six	Six	Six
Engine build	In-line	In-line	In-line
Governor/Class	Electronic/A1	Electronic/A1	Electronic/A1
Aspiration and cooling	Turbo Aftercooled	Turbo Aftercooled	Turbo Aftercooled
Bore and stroke	159 mm x 159 mm	159 mm x 159 mm	159 mm x 159 mm
Compression ratio	13.9:1	13.9:1	13.9:1
Cubic capacity	18.9 Litres	18.9 Litres	18.9 Litres
Starting/Min °C	Unaided/7°C	Unaided/7°C	Unaided/0°C
Battery capacity	190 A/hr	190 A/hr	190 A/hr
Nett Engine output – Prime	373 kWm	429 kWm	473 kWm
Nett at flywheel – Standby	429 kWm	477 kWm	529 kWm
Speed	1800 rpm	1800 rpm	1800 rpm
Alternator voltage regulation	±1.0%	±1.0%	±1.0%
Alternator insulation class	H	H	H
Single load step to NFPAll0	100%	100%	100%
Fuel consumption (Prime) 100% load	98 l/hr	111 l/hr	120 l/hr
Fuel consumption (Standby) 100% load	113 l/hr	122 l/hr	133 l/hr
Lubrication oil capacity	50 Litres	50 Litres	50 Litres
Base fuel tank capacity – open set	1200 Litres	1200 Litres	1200 Litres
Coolant capacity – radiator and engine	105 Litres	105 Litres	105 Litres
Exhaust temp – full load prime	493°C	471°C	481°C
Exhaust gas flow – full load prime	5554 m³/hr	5684 m³/hr	6242 m³/hr
Exhaust gas back pressure max	76 mm Hg	76 mm Hg	76 mm Hg
Air intake – engine	2092 m³/hr	2199 m³/hr	2473 m³/hr
Air flow – radiator (50°C)*	11.3 m³/s	14.8 m³/s	14.8 m³/s
Pusher fan head (duct allowance) 50°C*	13 mm Wg	13 mm Wg	13 mm Wg
Total heat radiated to ambient	85 kW	95 kW	99 kW
Engine derating – altitude	4% per 300 m above 1525 m	4% per 300 m above 1525 m	4% per 300 m above 1525 m
Engine derating – temperature	2% per 11°C above 40°C	2% per 11°C above 40°C	2% per 11°C above 40°C

In accordance with ISO 8528, BS5514.

Prime: Continuous running at variable load for unlimited periods with 10% overload available for 1 hour in any 12 hour period.

Standby: Continuous running at variable load for duration of an emergency.

*Subject to factory verification.

TECHNICAL DATA
Dimensions & Weights 60 Hz

Section G

VTA28 Series Engines

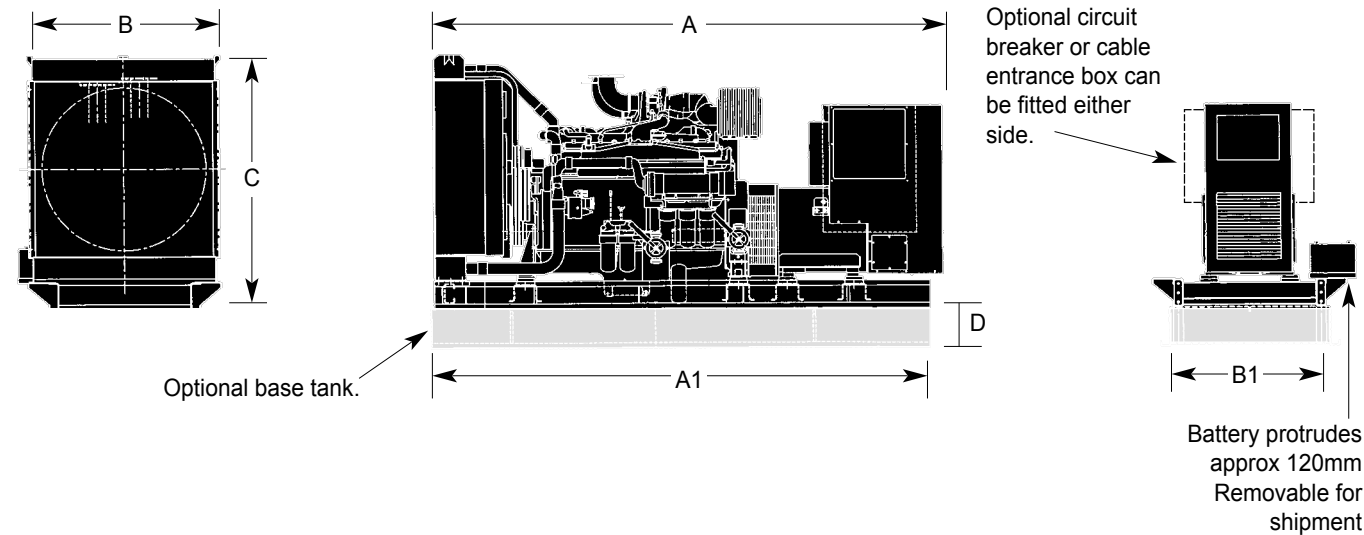


Table with 12 columns: New Model, Engine, Old Model, and Dimensions and Weights (mm/kg) (A, A1, B1, B, C, D), Set Weight kg Dry, Set Weight kg Wet, Tank Weight kg (dry), Tank Weight kg (wet).

QST30 Series Engines

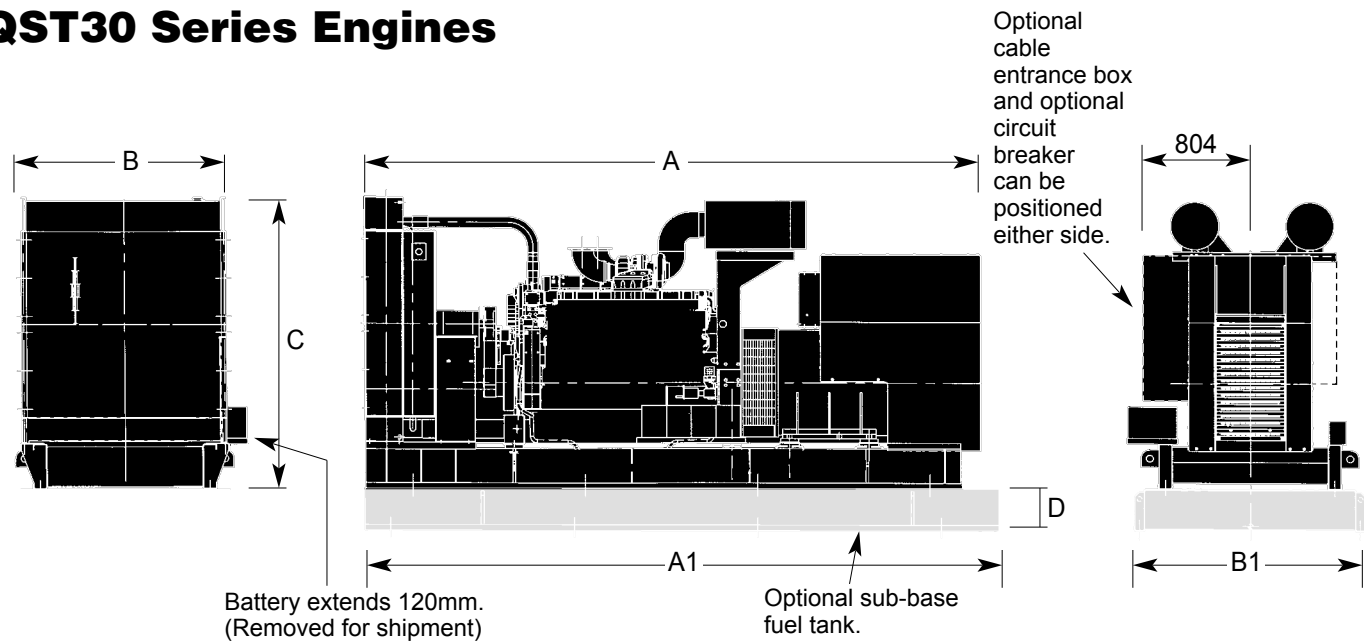
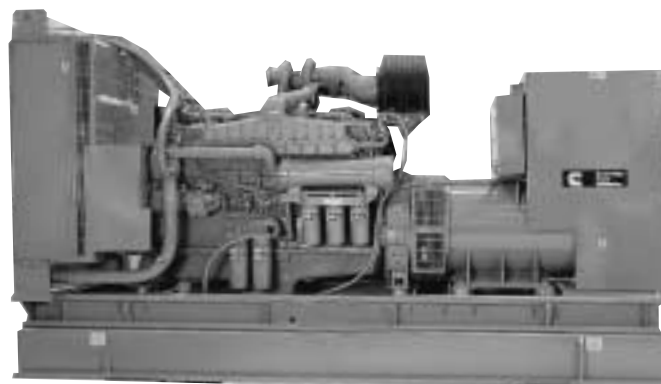


Table with 12 columns: New Model, Engine, Old Model, and Dimensions and Weights (mm/kg) (A, A1, B, B1, C, D), Set Weight kg Dry, Set Weight kg Wet, Tank Weight kg (dry), Tank Weight kg (wet).

Set weights are without sub-base tank. Dimensions and weights are for guidance only. Do not use for installation design. Ask for certified drawings on your specific application. Specifications may change without notice.

TECHNICAL DATA

545 kW - 603 kW 60 Hz VTA28 Series Engines



Generating Sets – 60 Hz

Set output	220-480 V 60 Hz
Prime at 40°C ambient	545 kW 681 kVA
1999 Set Model (Prime)	CP700-6
New Model (Prime)	545 DFGB
Standby at 40°C ambient	603 kW 754 kVA
1999 Set Model (Standby)	CS750-6
New Model (Standby)	603 DFGB
Engine Make	Cummins
Model	VTA28G5
Cylinders	Twelve
Engine build	Vee
Governor / Class	Electronic / A1
Aspiration and cooling	Turbo Aftercooled
Bore and stroke	140 mm x 152 mm
Compression ratio	13.0:1
Cubic capacity	28 Litres
Starting / Min °C	Unaided / 4°C
Battery capacity	254 A/hr
Nett Engine output – Prime	576 kWm
Nett at flywheel – Standby	639 kWm
Speed	1800 rpm
Alternator voltage regulation	±1.0%
Alternator insulation class	H
Single load step to NFPA110 para.5.13.2.6	100%
Fuel consumption (Prime) 100% load	154 l/hr
Fuel consumption (Standby) 100% load	173 l/hr
Lubrication oil capacity	83 Litres
Base fuel tank capacity – open set	1325 Litres
Coolant capacity – radiator and engine	207 Litres
Exhaust temp – full load prime	474°C
Exhaust gas flow – full load prime	7877 m³/hr
Exhaust gas back pressure max	76 mm Hg
Air intake – engine	3510 m³/hr
Air flow – radiator (50°C)*	19.4 m³/s
Pusher fan head (duct allowance) 50°C*	13 mm Wg
Total heat radiated to ambient	133 kW
Engine derating – altitude	4% per 300 m above 1220 m
Engine derating – temperature	2% per 11°C above 40°C

In accordance with ISO 8528, BS5514.

Prime: Continuous running at variable load for unlimited periods with 10% overload available for 1 hour in any 12 hour period.

Standby: Continuous running at variable load for duration of an emergency.

*Subject to factory verification.

TECHNICAL DATA

690 kW - 925 kW 60 Hz QST30 Series Engines



Generating Sets – 60 Hz

Set output	220-480 V 60 Hz	220-480 V 60 Hz	220-480 V 60 Hz
Prime at 40°C ambient	690 kWe 862 kVA	736 kWe 920 kVA	835 kWe 1044 kVA
1999 Set Model (Prime)	CP850-6	CP900-6	CP1000-6
New Model (Prime)	690 DFHA	736 DFHB	835 DFHC
Standby at 40°C ambient	760 kWe 950 kVA	810 kWe 1012 kVA	925 kWe 1156 kVA
1999 Set Model (Standby)	CS950-6	CS1000-6	CS1100-6
New Model (Standby)	760 DFHA	810 DFHB	925 DFHC
Engine Make	Cummins	Cummins	Cummins
Model	QST30G1	QST30G2	QST30G3
Cylinders	Twelve	Twelve	Twelve
Engine build	Vee	Vee	Vee
Governor/Class	Electronic/A1	Electronic/A1	Electronic/A1
Aspiration and cooling	Turbo Aftercooled	Turbo Aftercooled	Turbo Aftercooled
Bore and stroke	140 mm x 165 mm	140 mm x 165 mm	140 mm x 165 mm
Compression ratio	14:1	14:1	14:1
Cubic capacity	30.48 Litres	30.48 Litres	30.48 Litres
Starting/Min °C	Unaided/1°C	Unaided/1°C	Unaided/7°C
Battery capacity	254 A/hr	254 A/hr	254 A/hr
Nett Engine output – Prime	718 kWm	759 kWm	910 kWm
Nett Engine output – Standby	796 kWm	844 kWm	1007 kWm
Speed	1800 rpm	1800 rpm	1800 rpm
Alternator voltage regulation	±0.5%	±0.5%	±0.5%
Alternator insulation class	H	H	H
Single load step to NFPAII0	100%	100%	100%
Fuel consumption (Prime) 100% load	186 l/hr	197 l/hr	207 l/hr
Fuel consumption (Standby) 100% load	207 l/hr	219 l/hr	228 l/hr
Lubrication oil capacity	154 Litres	154 Litres	154 Litres
Base fuel tank capacity – open set	1700 Litres	1700 Litres	1700 Litres
Coolant capacity – radiator and engine	168 Litres	168 Litres	168 Litres
Exhaust temp – full load prime	455°C	467°C	464°C
Exhaust gas flow – full load prime	9432 m³/hr	10058 m³/hr	10800 m³/hr
Exhaust gas back pressure max	76 mm Hg	76 mm Hg	76 mm Hg
Air intake – engine	3679 m³/hr	3859 m³/hr	4284 m³/hr
Air flow 40°C ambient*	19.1 m³/s	19.1 m³/s	TBA
Air flow – radiator (50°C ambient)*	21.9 m³/s	21.9 m³/s	21.9 m³/s
Pusher fan head (duct allowance) 50°C*	13 mm Wg	13 mm Wg	13 mm Wg
Total heat radiated to ambient (prime)	153 kW	166 kW	152 kW
Engine derating – altitude	4% per 300 m above 1524 m	4% per 300 m above 1524 m	4% per 300 m above 1000 m
Engine derating – temperature	2% per 11°C above 40°C (52°C below 305 m)	2% per 11°C above 40°C (52°C below 305 m)	2% per 11°C above 40°C

In accordance with ISO 8528, BS5514.

Prime: Continuous running at variable load for unlimited periods with 10% overload available for 1 hour in any 12 hour period.

Standby: Continuous running at variable load for duration of an emergency.

Prime and standby ratings are outputs at 40°C (104°F) ambient temperature.

*Subject to factory verification.

TECHNICAL DATA
Dimensions & Weights 60 Hz

KTA38 Series Engines

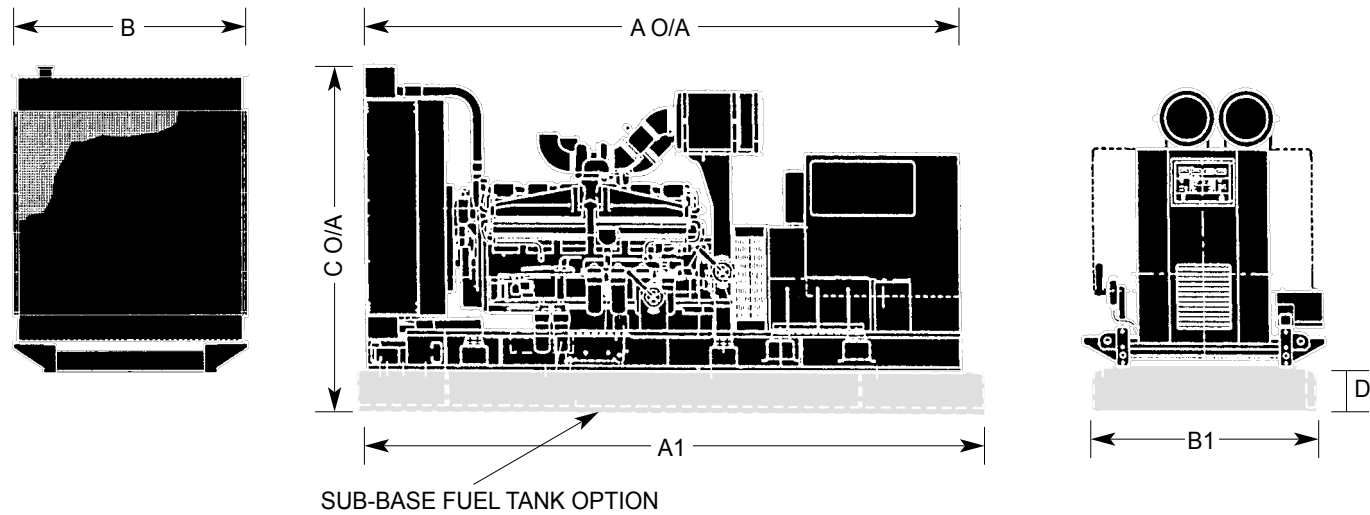


Table with 12 columns: New Model, Engine, Old Model, and a group of 5 columns for Dimensions and Weights (mm/kg) (A, A1, B, B1, C, D), followed by Set Weight (kg Dry, kg Wet), Tank Weight (kg (dry), kg (wet)).

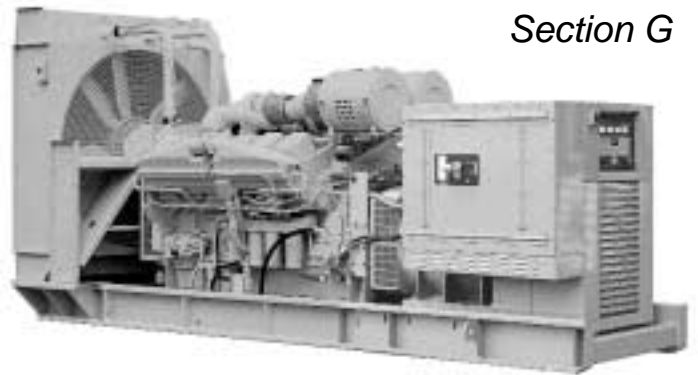
Table titled 'Floor mounted circuit breaker and load terminal cubicle (for use above 1250 amps)' with 4 columns: Capacity amps, Width mm, Depth mm, Height mm. It lists specifications for 1600, 2000, 2500, and 3200 amp capacities.

Set weights are without sub-base tank. Dimensions and weights are for guidance only. Do not use for installation design. Ask for certified drawings on your specific application. Specifications may change without notice.

TECHNICAL DATA

Section G

928 kW - 1020 kW 60 Hz KTA38 Series Engines



Generating Sets – 60 Hz

Set output	220-480 V 60 Hz
Prime at 40°C ambient	928 kWe 1160 kVA
1999 Set Model (Prime)	CP1100-6
New Model (Prime)	928 DFJD
Standby at 40°C ambient	1020 kWe 1276 kVA
1999 Set Model (Standby)	CS1250-6
New Model (Standby)	1020 DFJD
Engine Make	Cummins
Model	KTA38G4
Cylinders	Twelve
Engine build	Vee
Governor / Class	Electronic / A1
Aspiration and cooling	Turbo Aftercooled
Bore and stroke	159 mm x 159 mm
Compression ratio	13.9:1
Cubic capacity	37.8 Litres
Starting / Min °C	Unaided / 7°C
Battery capacity	254 A/hr
Nett Engine output – Prime	973 kWm
Nett at flywheel – Standby	1078 kWm
Speed	1800 rpm
Alternator voltage regulation	±0.5%
Alternator insulation class	H
Single load step to NFPAll0 para 5.13.2.6	100%
Fuel consumption (Prime) 100% load	245 l/hr
Fuel consumption (Standby) 100% load	271 l/hr
Lubrication oil capacity	135 Litres
Base fuel tank capacity – open set	1700 Litres
Coolant capacity – radiator and engine	307 Litres
Exhaust temp – full load prime	499°C
Exhaust gas flow – full load prime	13107 m³/hr
Exhaust gas back pressure max	76 mm Hg
Air intake – engine (Prime)	4892 m³/hr
Air flow – radiator (50°C ambient)*	28.5 m³/s
Pusher fan head (duct allowance) 50°C*	13 mm Wg
Total heat radiated to ambient	197 kW
Engine derating – altitude	4% per 300 m above 1525 m
Engine derating – temperature	2% per 11°C above 40°C

In accordance with ISO 8528, BS5514.

Prime: Continuous running at variable load for unlimited periods with 10% overload available for 1 hour in any 12 hour period.

Standby: Continuous running at variable load for duration of an emergency.

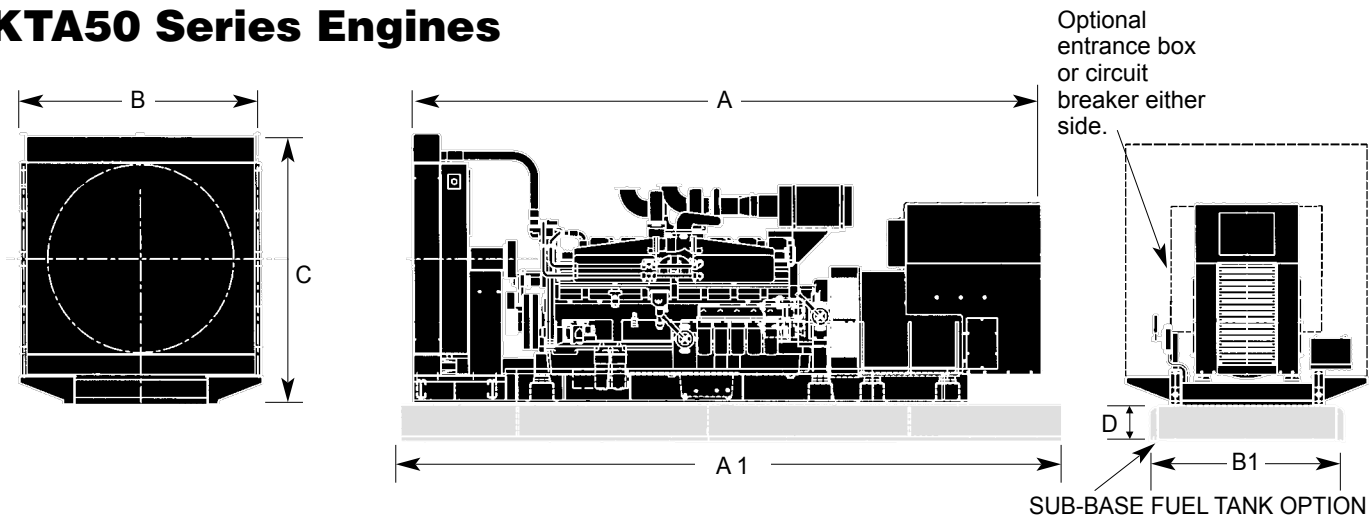
*Subject to factory verification.

TECHNICAL DATA

Dimensions & Weights 60 Hz

Section G

KTA50 Series Engines



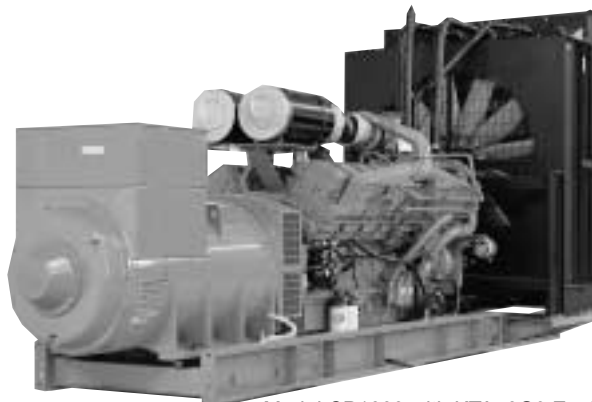
New Model	Engine	Old Model	Dimensions and Weights (mm/kg)						Set Weight	Set Weight	Tank Weight	Tank Weight
			A	A1	B	B1	C	D	kg Dry	kg Wet	kg (dry)	kg (wet)
1120 DFLC	KTA50G3	CP1400-6	5290	5690	1785	1640	2244	300	9743	10300	2755	1075
1286 DFLE	KTA50G9	CP1600-6	5866	5690	2033	1640	2333	300	11540	12100	2755	1075

Floor mounted circuit breaker and load terminal cubicle (for use above 2000 amps)			
Capacity amps	Width mm	Depth mm	Height mm
1600	1000	1050	1500
2000	1000	1050	1500
2500	1000	1050	1500

Set weights are **without** sub-base tank. Dimensions and weights are for **guidance** only. Do not use for installation design.
Ask for certified drawings on your specific application. Specifications may change without notice.

TECHNICAL DATA

1120 kW - 1545 kW 60 Hz KTA50 Series Engines

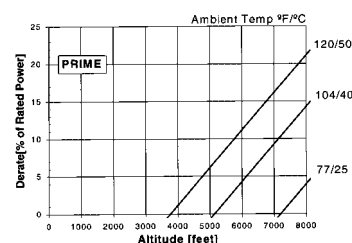
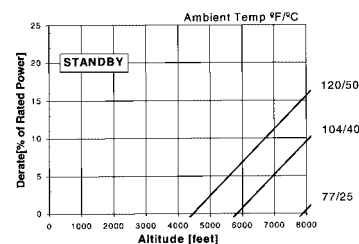


Model CP1600 with KTA50G9 Engine

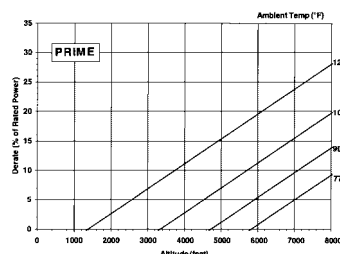
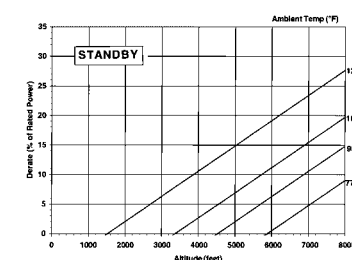
Generating Sets – 60 Hz

Set output	220-480 V 60 Hz	220-480 V 60 Hz
Prime at 40°C ambient	1120 kWe 1400 kVA	1286 kWe 1608 kVA
1999 Set Model (Prime)	CP1400-6	CP1600-6
New Model (Prime)	1120 DFLE	1286 DFLE
Standby at 40°C ambient	1270 kWe 1587 kVA	1545 kWe 1931 kVA
1999 Set Model (Standby)	CS1600-6	CS1900-6
New Model (Standby)	1270 DFLE	1545 DFLE
Engine Make	Cummins	Cummins
Model	KTA50G3	KTA50G9
Cylinders	Sixteen	Sixteen
Engine build	60° Vee	60° Vee
Governor / Class	Electronic / A1	Electronic / A1
Aspiration and cooling	Turbo Aftercooled	Turbo Aftercooled
Bore and stroke	159 mm x 159 mm	159 mm x 159 mm
Compression ratio	13.9:1	13.9:1
Cubic capacity	50.3 Litres	50.3 Litres
Starting / Min °C	Unaided / 7°C	Unaided / 7°C
Battery capacity	254 A/hr	254 A/hr
Nett Engine output – Prime	1172 kWm	1370 kWm
Nett at flywheel – Standby	1332 kWm	1609 kWm
Speed	1800 rpm	1800 rpm
Alternator voltage regulation	±0.5%	±0.5%
Alternator insulation class	H	H
Single load step to NFPA110 para.5.13.2.6	100%	100%
Fuel consumption (Prime) 100% load	291 l/hr	330 l/hr
Fuel consumption (Standby) 100% load	330 l/hr	392 l/hr
Lubrication oil capacity	177 Litres	204 Litres
Base fuel tank capacity – open set	2000 Litres	2000 Litres
Coolant capacity – radiator and engine	351 Litres	521 Litres*
Exhaust temp – full load prime	460°C	471°C
Exhaust gas flow – full load prime	14270 m³/hr	16308 m³/hr
Exhaust gas back pressure max	51 mm Hg	51 mm Hg
Air flow – radiator (50°C ambient)*	33.7 m³/s	28.2 m³/s
Pusher fan head (duct allowance) 50°C*	13 mm Wg	13 mm Wg*
Air intake – engine	6285 m³/hr	6948 m³/hr
Total heat radiated to ambient	229 kW	186 kW
Engine derating – altitude	up to 1550 m (5500 ft) prime and 1760 m (5800 ft) standby @ 40°C without derating. Above these limits refer to graphs	
Engine derating – temperature	up to 1000 m (3300 ft) prime or standby @ 40°C without derating. Above these limits refer to graphs	

KTA50G3



KTA50G9



In accordance with ISO 8528, BS5514.

Prime: Continuous running at variable load for unlimited periods with 10% overload available for 1 hour in any 12 hour period.

Standby: Continuous running at variable load for duration of an emergency.

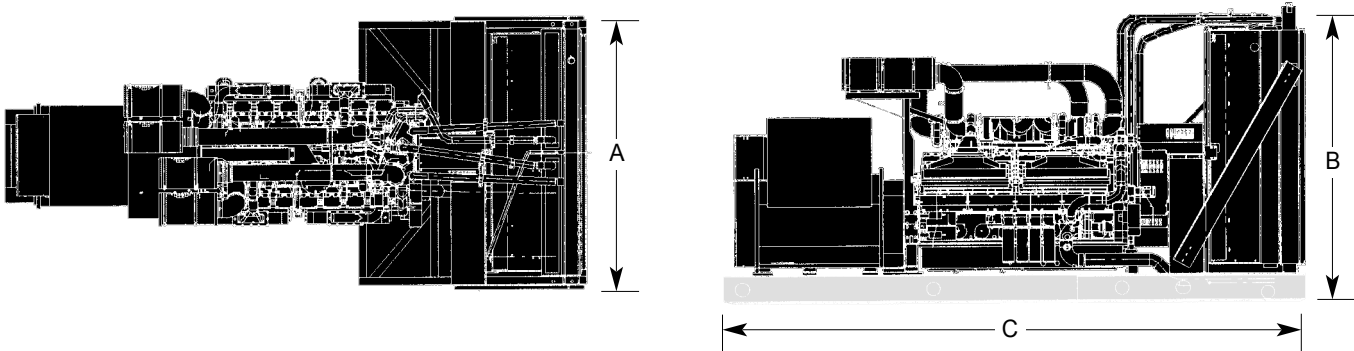
*Subject to factory verification.

TECHNICAL DATA

Dimensions & Weights 60 Hz

Section G

QSK60 Series



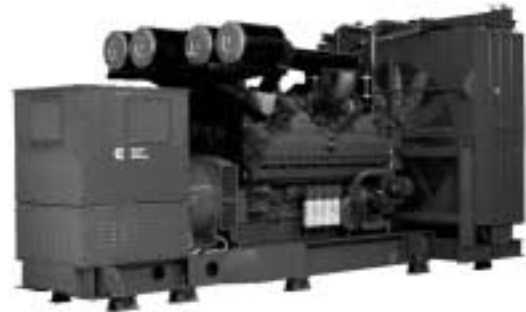
Model	Dim "A"		Dim "B"		Dim "C"		Dry Weight*	
1600 DQKB	98.2 in	2494 mm	119.8 in	3043 mm	239.7 in	6090 mm	34260 lb	15540 kg
1800 DQKC	98.2 in	2494 mm	119.8 in	3043 mm	239.7 in	6090 mm	34701 lb	15740 kg

*Weight given is with standard low voltage alternator.

Floor mounted circuit breaker and load terminal cubicle (for use above 2000 amps)			
Capacity amps	Width mm	Depth mm	Height mm
1600	1000	1050	1500
2000	1000	1050	1500
2500	1000	1050	1500

Set weights are **without** sub-base tank.
Dimensions and weights are for **guidance** only. Do not use for installation design. Ask for certified drawings on your specific application.
Specifications may change without notice.

1600 kW - 2000 kW 60 Hz QSK60 Series Engines



Generating Sets – 60 Hz

	Standby				Prime				Standby				Prime			
Ratings kW (kVA)	1750 (2188)				1600 (2000)				2000 (2500)				1800 (2250)			
Model	1750 DQKB				1600 DQKB				2000 DQKC				1800 DQKC			
Engine Model	QSK60G6				QSK60G6				QSK60G6				QSK60G6			
Aspiration	Turbocharged and Aftercooled				Turbocharged and Aftercooled				Turbocharged and Aftercooled				Turbocharged and Aftercooled			
Gross Engine Power Output	1,907 kWm				1,733 kWm				2,180 kWm				1,950 kWm			
BMEP	2,117 kPa				1,917 kPa				2,420 kPa				2,159 kPa			
Bore	159 mm				159 mm				159 mm				159 mm			
Stroke	190 mm				190 mm				190 mm				190 mm			
Piston Speed	11.4 m/s				11.4 m/s				11.4 m/s				11.4 m/s			
Compression Ratio	14.5:1				14.5:1				14.5:1				14.5:1			
Lube Oil Capacity	280 Litres				280 Litres				280 Litres				280 Litres			
Overspeed Limit	2,100 ± 50 rpm				2,100 ± 50 rpm				2,100 ± 50 rpm				2,100 ± 50 rpm			
Regenerative Power	207 kW				207 kW				207 kW				207 kW			
Fuel Consumption Load	1/4	1/2	3/4	Full	1/4	1/2	3/4	Full	1/4	1/2	3/4	Full	1/4	1/2	3/4	Full
Fuel Consumption L/hr	146	243	339	436	144	228	314	403	161	269	389	517	148	247	350	460
Maximum Fuel Flow	2,309 L/hr				2,309 L/hr				2,309 L/hr				2,309 L/hr			
Maximum Inlet Restriction	120 mm Hg				120 mm Hg				102 mm Hg				102 mm Hg			
Maximum Return Restriction	229 mm Hg				229 mm Hg				229 mm Hg				229 mm Hg			
Maximum Fuel Inlet Temperature	70°C				70°C				71°C				71°C			
Maximum Fuel Return Temperature	113°C				113°C				113°C				113°C			
Fan Load	50 kW				50 kW				50 kW				50 kW			
Coolant Capacity (with radiator)	378.5 Litres				378.5 Litres				454 Litres				454 Litres			
Coolant Flow Rate (engine jacket)	1,932 L/Min				1,932 L/Min				1,817 L/Min				1,817 L/Min			
Coolant Flow Rate (aftercooler)	510 L/Min				510 L/Min				502 L/Min				502 L/Min			
Heat Rejection to Eng Jacket Coolant	36.4 MJ/Min				34.0 MJ/Min				40.6 MJ/Min				37.4 MJ/Min			
Heat Rejection to Aftercooler Coolant	28.8 MJ/Min				26.2 MJ/Min				37.6 MJ/Min				31.0 MJ/Min			
Heat Rejection to Fuel	3.2 MJ/Min				3.2 MJ/Min				3.2 MJ/Min				3.2 MJ/Min			
Heat Radiated to Room	19.0 MJ/Min				15.9 MJ/Min				23.3 MJ/Min				19.5 MJ/Min			
Max Coolant Friction Head (JW)	69 kPa				69 kPa				69 kPa				69 kPa			
Max Coolant Friction Head (aftercooler)	35 kPa				35 kPa				48.3 kPa				48.3 kPa			
Maximum Coolant Static Head	18.3 m				18.3 m				18.3 m				18.3 m			
Heat Ex. Max Raw Water Flow (JW/AC)	1,363 L/Min				1,363 L/Min				1,363 L/Min				1,363 L/Min			
Heat Ex. Max Raw Water Press (JW/AC/Fuel)	1,034 kPa				1,034 kPa				1,034 kPa				1,034 kPa			
Heat Ex. Max Raw Water Flow (Fuel)	144 L/Min				144 L/Min				144 L/Min				144 L/Min			
Max Top Tank Temp (engine jacket)	104°C				100°C				104°C				100°C			
Max Inlet Temp (aftercooler)	65°C				65°C				65°C				65°C			
Combustion Air	151 m³/min				144 m³/min				172 m³/min				161 m³/min			
Maximum Air Cleaner Restriction	6.2 kPa				6.2 kPa				6.2 kPa				6.2 kPa			
Alternator Cooling Air	290 m³/min				290 m³/min				290 m³/min				290 m³/min			
Radiator Cooling Air	1,869 m³/min				1,869 m³/min				1,726 m³/min				1,726 m³/min			
Minimum Air Opening to Room	8.4 m²				8.4 m²				8.4 m²				8.4 m²			
Minimum Discharge Opening	5.7 m²				5.7 m²				5.7 m²				5.7 m²			
Max Static Restriction	125 Pa				125 Pa				125 Pa				125 Pa			
Gas Flow (Full Load)	380 m³/min				352 m³/min				429 m³/min				390 m³/min			
Gas Temperature	423°C				404°C				455°C				430°C			
Maximum Back Pressure**	6.8 kPa				6.8 kPa				6.8 kPa				6.8 kPa			
Unit Dry Weight (with oil)**	15,875 kgs				15,875 kgs				15,875 kgs				15,875 kgs			
Derating Factors	Engine power available up to 6300 ft (1920 m) at ambient temperatures up to 40°C (104°F). Above 6300 ft (1920 m) derate at 4.6% per 1000 ft (305 m), and 4% per 11°C (2% per 10°F) above 40°C (104°F).								Engine power available up to 2300 ft (700 m) at ambient temperatures up to 104°F (40°C). Above 2300 ft (700 m) derate at 3.5% per 1000 ft (305 m), and 4% per 11°C (2% per 10°F) above 40°C (104°F) up to 5000 ft.							

** Approximate only. Actual weight dependent upon options selected.

TABLES

Section G

FORMULA FOR DETERMINING AMPS, HORSEPOWER, KILOWATTS AND kVA

ALTERNATING CURRENT						I = Amps E = Line Volts Eff = per Unit Efficiency kW = Kilowatts PF = Power Factor kVA = Kilo-Volt-Amps H.P. = Horse Power NOTE: Efficiency varies between about 86% for 25kVA to 93% for 1000kVA. Generally the larger the alternator, the greater its efficiency. The power factor for normal purposes should be taken as 0.85.
TO FIND		DIRECT CURRENT	SINGLE PHASE 2 WIRE	TWO PHASE 4 WIRE	THREE PHASE 4 WIRE	
Amps when H.P. is known	$\frac{H.P. \times 746}{E \times \text{Eff}}$		$\frac{H.P. \times 746}{E \times \text{Eff} \times \text{PF}}$	$\frac{H.P. \times 746}{2 \times E \times \text{Eff} \times \text{PF}}$	$\frac{H.P. \times 746}{1.73 \times E \times \text{Eff} \times \text{PF}}$	
Amps when kW is known	$\frac{kW \times 1000}{E}$		$\frac{kW \times 1000}{E \times \text{PF}}$	$\frac{kW \times 1000}{2 \times E \times \text{PF}}$	$\frac{kW \times 1000}{1.73 \times E \times \text{PF}}$	
Amps when kVA is known			$\frac{kVA \times 1000}{E}$	$\frac{kVA \times 1000}{2 \times E}$	$\frac{kVA \times 1000}{1.73 \times E}$	
Kilowatts	$\frac{I \times E}{1000}$		$\frac{I \times E \times \text{PF}}{1000}$	$\frac{I \times 2 \times E \times \text{PF}}{1000}$	$\frac{I \times 1.73 \times E \times \text{PF}}{1000}$	
kVA			$\frac{I \times E}{1000}$	$\frac{I \times E \times 2}{1000}$	$\frac{I \times E \times 1.73}{1000}$	
Horse Power	$\frac{I \times E \times \text{Eff}}{746}$		$\frac{I \times E \times \text{Eff} \times \text{PF}}{746}$	$\frac{I \times E \times 2 \times \text{Eff} \times \text{PF}}{746}$	$\frac{I \times E \times 1.73 \times \text{Eff} \times \text{PF}}{746}$	

CONVERSION TABLES

CENTIMETRES — INCHES

METRES — FEET

SQ. CENTIMETRES — SQ. INCHES

cm	INCHES	cm	INCHES	METRES	FEET	METRES	FEET	cm ²	INCHES ²	cm ²	INCHES ²
2.54	1	0.3937	129.54	51	20.0787	0.3048	1	3.28084	15.5448	51	167.323
5.08	2	0.7874	132.08	52	20.4724	0.6096	2	6.562	15.8496	52	170.604
7.62	3	1.1811	134.62	53	20.8661	0.9144	3	9.843	16.1544	53	173.884
10.16	4	1.5748	137.16	54	21.2598	1.2192	4	13.123	16.4592	54	177.165
12.70	5	1.9685	139.70	55	21.6535	1.5240	5	16.404	16.7640	55	180.446
15.24	6	2.3622	142.24	56	22.0472	1.8288	6	19.685	17.0688	56	183.727
17.78	7	2.7559	144.78	57	22.4409	2.1336	7	22.966	17.3736	57	187.008
20.32	8	3.1496	147.32	58	22.8346	2.4384	8	26.247	17.6784	58	190.289
22.86	9	3.5433	149.86	59	23.2283	2.7432	9	29.528	17.9832	59	193.570
25.40	10	3.9370	152.40	60	23.6220	3.0480	10	32.808	18.2880	60	196.850
27.94	11	4.3307	154.94	61	24.0157	3.3528	11	36.089	18.5928	61	200.131
30.48	12	4.7244	157.48	62	24.4094	3.6576	12	39.370	18.8976	62	203.412
33.02	13	5.1181	160.02	63	24.8031	3.9624	13	42.651	19.2024	63	206.693
35.56	14	5.5118	162.56	64	25.1969	4.2672	14	45.932	19.5072	64	209.974
38.10	15	5.9055	165.10	65	25.5906	4.5720	15	49.213	19.8120	65	213.255
40.64	16	6.2992	167.64	66	25.9843	4.8768	16	52.493	20.1168	66	216.535
43.18	17	6.6929	170.18	67	26.3780	5.1816	17	55.774	20.4216	67	219.816
45.72	18	7.0866	172.72	68	26.7717	5.4864	18	59.055	20.7264	68	223.097
48.26	19	7.4803	175.26	69	27.1654	5.7912	19	62.336	21.0312	69	226.378
50.80	20	7.8740	177.80	70	27.5591	6.0960	20	65.617	21.3360	70	229.659
53.34	21	8.2677	180.34	71	27.9528	6.4008	21	68.898	21.6408	71	232.940
55.88	22	8.6614	182.88	72	28.3465	6.7056	22	72.178	21.9456	72	236.220
58.42	23	9.0551	185.42	73	28.7402	7.0104	23	75.459	22.2504	73	239.501
60.96	24	9.4488	187.96	74	29.1339	7.3152	24	78.740	22.5552	74	242.782
63.50	25	9.8425	190.50	75	29.5276	7.6200	25	82.021	22.8600	75	246.063
66.04	26	10.2362	193.04	76	29.9213	7.9248	26	85.302	23.1648	76	249.344
68.58	27	10.6299	195.58	77	30.3150	8.2296	27	88.583	23.4696	77	252.625
71.12	28	11.0236	198.12	78	30.7087	8.5344	28	91.863	23.7744	78	255.906
73.66	29	11.4173	200.66	79	31.1024	8.8392	29	95.144	24.0792	79	259.186
76.20	30	11.8110	203.20	80	31.4961	9.1440	30	98.425	24.3840	80	262.467
78.74	31	12.2047	205.74	81	31.8898	9.4488	31	101.706	24.6888	81	265.748
81.28	32	12.5984	208.28	82	32.2835	9.7536	32	104.987	24.9936	82	269.029
83.82	33	12.9921	210.82	83	32.6772	10.0584	33	108.268	25.2984	83	272.310
86.36	34	13.3858	213.36	84	33.0709	10.3632	34	111.549	25.6032	84	275.591
88.90	35	13.7795	215.90	85	33.4646	10.6680	35	114.829	25.9080	85	278.871
91.44	36	14.1732	218.44	86	33.8583	10.9728	36	118.110	26.2128	86	282.152
93.98	37	14.5669	220.98	87	34.2520	11.2776	37	121.391	26.5176	87	285.433
96.52	38	14.9606	223.52	88	34.6457	11.5824	38	124.672	26.8224	88	288.714
99.06	39	15.3543	226.06	89	35.0394	11.8872	39	127.953	27.1272	89	291.995
102.60	40	15.7480	228.60	90	35.4331	12.1920	40	131.234	27.4320	90	295.276
104.14	41	16.1417	231.14	91	35.8268	12.4968	41	134.514	27.7368	91	298.556
106.68	42	16.5354	233.68	92	36.2205	12.8016	42	137.795	28.0416	92	301.837
109.22	43	16.9291	236.22	93	36.6142	13.1064	43	141.076	28.3464	93	305.118
111.76	44	17.3228	238.76	94	37.0079	13.4112	44	144.357	28.6512	94	308.399
114.30	45	17.7165	241.30	95	37.4016	13.7160	45	147.638	28.9560	95	311.680
116.84	46	18.1102	243.84	96	37.7953	14.0208	46	150.919	29.2608	96	314.961
119.38	47	18.5039	246.38	97	38.1890	14.3256	47	154.199	29.5656	97	318.241
121.92	48	18.8976	248.92	98	38.5827	14.6304	48	157.480	29.8704	98	321.522
124.46	49	19.2913	251.46	99	38.9764	14.9352	49	160.761	30.1752	99	324.803
127.00	50	19.6850	254.00	100	39.3701	15.2400	50	164.042	30.4800	100	328.084

TABLES – CONVERSIONS

Section G

TO CONVERT	INTO	MULTIPLY BY	TO CONVERT	INTO	MULTIPLY BY
Acres	Hectares (10,000 sq.m)	0.4047	Kilograms	Pounds (weight)	2.2046
Acres	Square feet	43560	Kilograms	Slugs	0.06852
Acres	Square metres	4047	Kilograms/sq.m.	Grams/sq.cm.	0.1
Acres	Square miles	0.001562	Kilograms/sq.m.	Pounds/sq.inch (weight)	0.001422
Ampere turns	Gilberts	1.257	Kilograms/sq.m.	Pounds/sq.foot (weight)	0.2048
Atmospheres	Inches of water at 4°C	406.8	Kilogram/cubic metre	Pounds/cubic inch (weight)	0.036-1000
Atmospheres	Inches of mercury at 0°C	29.92	Kilogram/cubic metre	Pounds/cubic foot (weight)	0.06243
Atmospheres	Kilograms/sq.m.	10330	Kilowatthours	Joules	3.6-1000000
Atmospheres	Newtons/sq.m.	101.320	Kilowatthours	Kilogram-metres	367100
Atmospheres	Pounds/sq.inch	14.7	Litres	Cubic centimetres	1000
BTU	Joules	1054.8	Litres	Cubic feet	0.03532
Centigrade	Fahrenheit	(C×1.8)+32°	Litres	Cubic inches	61.03
Centimetres	Feet	0.03281	Litres	Cubic metres	0.001
Centimetres	Inches	0.3937	Litres	Gallons (Imperial)	0.2199
Centimetres	Metres	0.01	Litres	Pints	1.759
Circular mils.	Sq. centimetres	5.067-1000000	Metres	Centimetres	100
Circular mils.	Sq. inches	0.785-1000000	Metres	Inches	39.37
Cubic centimetres	Cubic feet	35.31-1000000	Metres	Feet	3.281
Cubic centimetres	Cubic inches	0.06102	Metres	Yards	1.0936
Cubic centimetres	Cubic metres	1-1000000	Micro-bars (dynes/sq.cm.)	Newton/sq. metre	0.1
Cubic feet	Cubic centimetres	28320	Micro-bars	Pounds/sq.foot	0.00209
Cubic feet	Cubic inches	1728	Micro-bars	Pounds/sq.inch	0.0145-1000
Cubic feet	Cubic metres	0.02832	Miles (nautical)	Feet	6080
Cubic feet	Litres	28.32	Miles (statute)	Feet	5280
Cubic feet/minute	Cubic metres/hour	1.698	Miles	Kilometres	1.6093
Cubic feet/minute	Litres/second	0.4717	Miles/hour	Feet/minute	88
Cubic inches	Cubic centimetres	16.387	Miles/hour	Kilometres/hour	1.6093
Cubic inches	Cubic feet	0.5787-1000	Miles/hour	Metres/second	0.44704
Cubic inches	Cubic metres	0.0164-1000	Millimetres	Inches	0.03937
Cubic metres	Cubic centimetres	1000000	Mm water gauge 4°C	Inches water gauge 4°C	0.03937
Cubic metres	Cubic feet	35.31	Mm water gauge 4°C	Newtons/square metre	9.807
Cubic metres	Cubic inches	61020	Mm water gauge 4°C	Pascals	9.807
Cubic metres	Cubic yards	1.308	Newtons	Dynes	100000
Cubic yards	Cubic metres	0.7646	Newtons	Kilograms	0.1020
Degrees (angle)	Radians	0.01745	Newtons	Pounds	0.2248
Dynes	Pounds (force)	2.248-1000000	Newtons/sq.m.	Dynes/sq.cm.	10
Dynes	Poundals (force)	72.33-1000000	Newtons/sq.m.	Pounds/sq.foot (force)	0.020884
Dynes	Newtons	10-1000000	Newtons/sq.m.	Pounds/sq.inch	0.000145
Dynes/sq.cm.	Newtons/square metre	0.1	Pounds (weight)	Grams	453.6
Dynes/sq.cm.	Pounds/square foot (force)	0.00209	Pounds	Kilograms	0.4536
Ergs	Foot-pounds (force)	0.0737-1000000	Pounds (force)	Newtons	4.448
Ergs	Joules	0.10-1000000	Pounds	Slugs	0.03108
Ergs/second	Foot-pounds/second	0.0737-1000000	Pounds of water	Cubic feet	0.01602
Ergs/second	Watts	0.10-1000000	Pounds of water	Gallons	0.0997
Ergs/second-sq.cm.	Foot-pounds/second-sq.ft.	68.47-1000000	Pounds/cubic feet. (weight)	Kilogram/cubic metre	16.02
Ergs/second-sq.cm.	Watts/square metre	1-1000	Pounds/cubic inch	Pounds/cubic foot	1728
Fahrenheit	Centigrade	(F-32)×0.555	Pounds/sq.ft.	Grams/square cm.	0.4882
Fathoms	Feet	6	Pounds/sq.ft.	Kilograms/sq.metre	4.882
Feet	Centimetres	30.48	Pounds/sq.ft. (force)	Newtons/square metre	47.85
Feet	Metres	0.3048	Pounds/sq.ft.	Pounds/sq.inch (force)	0.006944
Feet/minute	Metres/second	0.00508	Pounds/sq.inch (weight)	Kilograms/square metre	703.1
Feet of water at 4°C	Inches of mercury at 0°C	0.8826	Pound/sq.inch (force)	Newtons/square metre	6894
Feet of water at 4°C	Kilograms/sq.m.	304.8	Pounds/sq.inch (force)	Pounds/sq.ft. (force)	144
Feet of water at 4°C	Newtons/sq.m.	2989	Poundals (force)	Dynes	13830
Feet of water at 4°C	Pounds/sq.ft.	62.43	Poundals	Pounds (force)	0.031
Feet of water at 4°C	Pounds/sq.inch	0.4335	Poundals	Newtons	0.1382
Foot pounds	Kilogram-metres	0.1383	Rayls	Mks rayls	10
Gallons (Imperial)	Cubic metres	0.003785	Slugs	Kilograms	14.594
Gallons (Imperial)	Gallons (US)	1.201	Slugs	Pounds (weight)	32.174
Gallons (Imperial)	Litres	4.545	Slugs/sq.ft.	Kilogram/sq.m.	157.2
Gauss	Lines/sq.inch	6.452	Square centimetres	Square inches	0.1550
Gauss	Webers/sq.metre	0.0001	Square feet	Square metres	144
Gilberts	Ampere turns	0.7958	Square feet	Square yards	0.0929
Grams	Dynes	980.7	Square metres	Square feet	9
Grams	Ounces (weight)	0.03527	Square metres	Square inches	10.764
Grams	Pounds (weight)	0.002205	Square metres	Square yards	1550
Grams/sq.cm.	Pounds/square foot	2.0481	Square metres	Acres	1.196
H.P.	Foot-pounds/minute	33000	Square miles	Square kilometres	640
H.P.	Kilowatts	0.746	Square miles	Tonnes (1000 Kg.)	2.590
H.P.	Kilograms-calories/minute	10.69	Tons (2240)	Newtons/sq.m.	1.016
Inches	Centimetres	2.54	Water gauge (inches)	Newtons/sq.m.	249
Inches	Metres	0.0254	Water gauge (mm.)	Newtons/sq.m.	9.807
Inches of water at 4°C	Kilograms/square metre	25.4	Watts	Ergs/second	10-1000000
Inches of water at 4°C	Pounds/square foot	5.202	Watts	Foot-pounds/minute	44.26
Joules	Foot-pounds	0.7376	Watts	Horsepower	0.001341
Joules	Ergs	10-1000000	Watts	Kilogram-calories/minute	0.01433
Kilogram-calories	Kilogram-metres	426.9	Watts/sq.m.	Watts/sq.cm.	0.1-1000
Kilograms	Grams	1000	Webers/sq.m.	Gauss	10-1000

FULL LOAD CURRENT OF THREE PHASE SETS

STANDARD THREE PHASE VOLTAGES @ 0.8p.f.

		AMPS								
VOLTAGE		550/ 254	440/ 254	415/ 240	400/ 230	380/ 220	346/ 200	220/ 127	208/ 120	190/ 110
kVA @	1	1.0	1.3	1.3	1.4	1.5	1.6	2.6	2.8	3.0
0.8 P.F.	2	2.1	2.6	2.7	2.8	3.0	3.3	5.2	5.6	6.0
	3	3.1	3.9	4.1	4.3	4.5	5.0	7.8	8.4	9.1
	4	4.2	5.3	5.5	5.7	6.0	6.7	10.5	11.0	12.1
	5	5.2	6.6	6.9	7.2	7.6	8.3	14.0	14.0	15.1
	6	6.3	7.9	8.3	8.6	9.1	10.0	15.8	16.7	18.2
	7	7.3	9.2	9.7	10.1	10.6	11.7	18.4	19.5	21.2
	8	8.4	10.5	11.1	11.6	12.1	13.3	21	22.3	24.3
	9	9.4	11.8	12.5	13	13.6	15.2	23.6	25	27.4
	10	10.5	13	13.9	14	15	16.7	26	28	30
	15	16	20	20.8	21	22.7	25.0	39	42	45
	20	21	26	27.8	29	30	33.4	52	55	60
	25	26	33	34.7	36	38	41.7	66	69	76
	30	32	39	41.7	43	45	50.0	78	83	91
	35	37	46	49	50	53	58.5	92	98	106
	40	42	53	55	57	60	66.8	105	111	122
	45	47	59	62	65	68	75.2	118	124	137
	50	52	66	69	72	76	83.5	131	138	152
	55	58	72	76	79	83	91.8	144	152	167
	60	63	79	83	86	91	100	157	166	183
	65	68	85	90	93	98	108	170	180	198
	70	73	92	97	101	106	116	184	194	213
	75	79	98	104	108	114	125	197	208	228
	80	84	105	111	115	121	133.6	210	222	243
	85	89	112	118	123	129	141	223	236	258
	90	95	118	125	130	136	150	236	250	274
	95	100	125	132	137	144	158	250	264	289
	100	105	131	139	144	152	167.0	262	278	304
	105	110	138	146	152	159	175	276	292	319
	110	116	144	153	159	167	184	288	305	334
	115	121	151	159	166	175	192	302	319	350
	120	126	158	166	173	182	200	315	333	364
	125	131	164	174	181	190	208	328	347	380
	130	136	171	180	188	197	217	341	361	395
	135	142	177	187	195	205	225	355	375	410
	140	147	184	194	202	212	233	367	389	425
	145	152	190	201	209	220	242	380	403	441
	150	157	197	208	217	228	250	394	416	456
	155	163	203	215	224	235	258	407	430	471
	160	168	210	222	231	243	266	420	444	487
	165	173	217	229	238	250	275	433	458	502
	170	179	223	236	246	258	283	446	472	516
	175	184	230	243	253	266	291	459	486	531
	180	189	236	250	260	273	300	472	500	547
	185	195	243	257	267	281	308	486	514	562
	190	200	250	264	274	289	316	500	528	578
	195	205	256	271	281	296	324	512	542	593
	200	210	263	278	289	304	334	525	555	608
	205	215	269	285	296	310	342	538	569	623
	210	221	275	292	303	319	350	551	583	638
	215	226	282	299	311	327	359	565	597	654
	220	231	289	306	318	335	367	577	611	668
	225	236	296	313	325	342	375	590	625	684
	230	242	302	319	332	350	384	604	638	700
	235	247	308	326	339	359	392	616	652	715
	240	252	315	333	347	365	400	630	666	730
	245	259	322	340	354	372	409	643	680	745
	250	263	328	347	361	379	493	656	694	760
	300	315	394	417	434	456	501	787	833	912
	400	420	525	556	578	608	668	1050	1110	1215
	500	525	656	695	722	760	835	1312	1389	1520
	600	630	787	834	866	912	1002	1575	1665	1823
	700	735	919	974	1010	1064	1169	1837	1943	2127
	750	787	984	1043	1083	1140	1252	1968	2082	2279

FULL LOAD CURRENT OF SINGLE PHASE SETS

		STANDARD SINGLE PHASE VOLTAGE					
		AMPS					
VOLTAGE		240	220	200	120	110	100
kVA @ 0.8 P.F.	5	21	23	25	42	45	50
	10	42	45	50	84	91	100
	15	63	68	75	125	136	150
	20	83	91	100	166	182	200
	25	104	114	125	208	227	250
	30	125	136	150	250	272	300
	35	146	159	175	292	318	350
	40	167	182	200	334	364	400
	45	188	205	225	375	409	450
	50	208	227	250	417	454	500
	55	229	250	275	458	500	550
	60	250	273	300	500	546	600
	65	271	295	325	542	591	650
	70	292	318	350	584	636	700
	75	313	341	375	625	682	750
	80	333	364	400	666	727	800
	85	354	386	425	709	772	850
	90	375	409	450	750	818	900
	95	396	432	475	792	864	950
	100	417	455	500	834	909	1000
	105	438	477	525	875	954	1050
	110	458	500	550	916	1000	1100
	115	479	523	575	958	1046	1150
	120	500	546	600	1000	1091	1200
	130	542	591	650	1083	1182	1300
	135	563	614	675	1125	1227	1350
	140	583	636	700	1166	1272	1400
	145	604	659	725	1209	1318	1450
	150	625	682	750	1250	1364	1500
	155	646	704	775	1292	1409	1550
	160	667	727	800	1334	1454	1600
	165	688	750	825	1375	1500	1650
	170	708	773	850	1417	1545	1700
	175	729	795	875	1458	1590	1750
	180	750	818	900	1500	1636	1800
	185	771	841	925	1542	1682	1850
	190	791	864	950	1583	1728	1900
	195	812	886	975	1625	1772	1950
	200	833	909	1000	1666	1818	2000
	205	854	931	1025	1708	1863	2050
	210	875	954	1050	1750	1909	2100
	215	896	977	1075	1791	1954	2150
	220	917	1000	1100	1833	2000	2200
	225	937	1023	1125	1875	2046	2250
	230	958	1045	1150	1917	2091	2300
	235	979	1068	1175	1958	2136	2350
	240	1000	1091	1200	2000	2181	2400
	245	1021	1114	1225	2042	2227	2450
	250	1042	1136	1250	2082	2272	2500

WEIGHTS OF LIQUIDS			
Liquid	lb/Imp Gallon	Kg per Litre	Specific Gravity
Water	10.00	1.00	1.000
Lube Oil	9.00	0.90	0.916
Diesel Fuel	8.50	0.85	0.855
Kerosene	8.00	0.80	0.8000

Foundations – BEARING LOAD CAPABILITY			
Material	Kg/Sq cm	PSI	KPA
Rock, Hardpan	4.92	70	482
Hard clay, Gravel and Course Sand	3.93	56	386
Loose Medium Sand and Medium Clay	1.96	28	193
Loose Fine Sand	0.98	14	96.4
Soft Clay	0 to 0.98	0 to 14	0 to 96.4



VOLTMETER
A- AMMETER
HZ - FREQUENCY METER
SYN - SYNCHROSCOPE
KW - KILOWATT METER
PF - POWER FACTOR METER



LAMP



LED



CAPACITOR



BATTERY



EARTH



DIODE



OPEN CONTACTS



CLOSED CONTACTS



REISTER



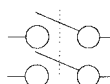
TERMINAL



LINK OR FUSE



MOTOR



ISOLATOR